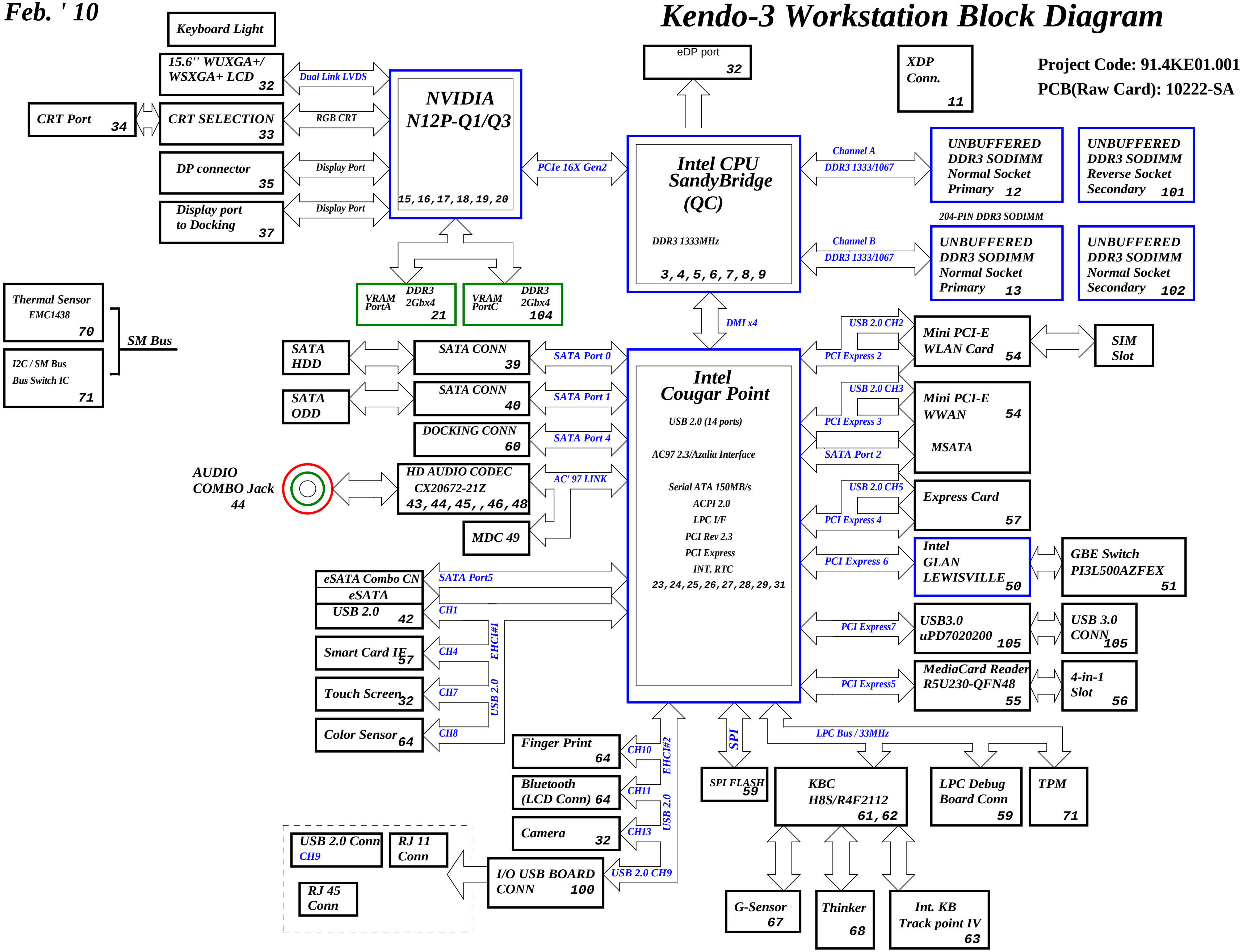
Feb. ' 10

Kendo-3 Workstation Block Diagram

Project Code: 91.4KE01.001

PCB(Raw Card): 10222-SA



PCB Layer Stackup

- L1:TOP
- L2:Signal 1
- L3:GND
- L4:Signal 2
- L5:VCC
- L6:GND
- L7:Signal 3
- L8:GND
- L9:Signal4
- L10:BOTTOM

Battery Charger/Selector BQ24742RHDR 78	
INPUTS	OUTPUTS
DOCK_PWR20_F	M-BAT-PWR S-BAT-PWR
System DC/DC TPS51222RTV 82	
VINT20	VCC5M VCC3M
CPU DC/DC VT1317MFQX/VT1317SFCX 79	
VINT20	VCCCPUCORE
GFXCORE_D ISL62882HRTZ 83	
VINT20	VCCGFXCORE
VCC1R5VIDEO MAX8792ETD 88	
VCC5M	VCC1R5VIDEO
VCC1R5A/DDR3_REF VCC0R75B TPS51116RGER 86	
VCC5M	DDR3_VREF VCC0R75B VCC1R5A
VCC1R8B TPS62290DRVR 89	
VCC3M VCC5M	VCC1R8B
VCC1R1B_VTT VCC1R05LAN VT358/VT357 85	
VINT20 VCC5M	VCC1R1B_VTT VCC1R05LAN

BOM

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title	Block Diagram		
Size: Custom	Document Number: Kendo-3 WS		Rev: SA
Date: Tuesday, December 07, 2010	Sheet 1	of 107	

RESISTOR

Symbol name	Value	Tolerance (J: 5%, F: 1%, D: 0.5%, B: 0.1 %)	Rating 0402=> 1/16W, 25V 0603 => 1/16W, 75V 0805 => 1/10W, 100V	Size 2=>0402, 3=>0603, 5=>0805, 6=>1206, 0=>1210
10KR3	10K Ohm	If no letter, it means J: 5%	1/16W, 75V	0603
33D3R5	33.3 Ohm	If no letter, it means J: 5%	1/10W, 100V	0805
1KR3F	1K Ohm	F: 1%	1/16W, 75V	0603

The naming rule is value + R + size + tolerance
For the value, it can be read by the number before R. (R means resistor)
For the tolerance, it can be read from the last letter.
For the rating, we don't show on the symbol name.
For the size, R2=>0402, R3=>0603, R5=>0805,....

CAPACITOR

Symbol name	Value	Tolerance (M: +/-20, K: +/-10, Z: +80/-20)	Rating	Size 2=>0402, 3=>0603, 5=>0805, 6=>1206, 0=>1210
SCD1U10V2MX-1	0.1uF	M/X5R	10V	0402
SC10U6D3V5MX	10uF	M/X5R	6.3V	0805
SC2D2U16V5ZY	2.2uF	Z/Y5V	16V	0805

The naming rule is
Capacitor type + value + rating + size + tolerance + material
SCD1U10V2MX-1
SC=> SMT Ceremic, TC=> POS cap or SP cap
D1U => 0.1uF
10V => the voltage rating is 10V
2=> 0402, 3=>0603, 5=>0805
M=>tolerance M, K, Z
X=> X7R/X5R, Y=> Y5V
-1 => symbol version, nonsense to EE characteristic

PLANAR_ID[3..0]

PCH GPIOn	39	38	49	48	Planar ID Version	Planar PCB Version
PLANAR_IDn	3	2	1	0		
	0	0	0	0	SDV	SA
	0	0	0	1	SDV	SA
	0	0	1	0	SDV2	SB
	0	0	1	1	FVT	SC
	0	1	0	0		
	0	1	0	1	SIT	SE
	0	1	1	0	SVT	-1
	0	1	1	1		

EC HISTORY

Stage	Date	EC No.	Page	Note
SDV				

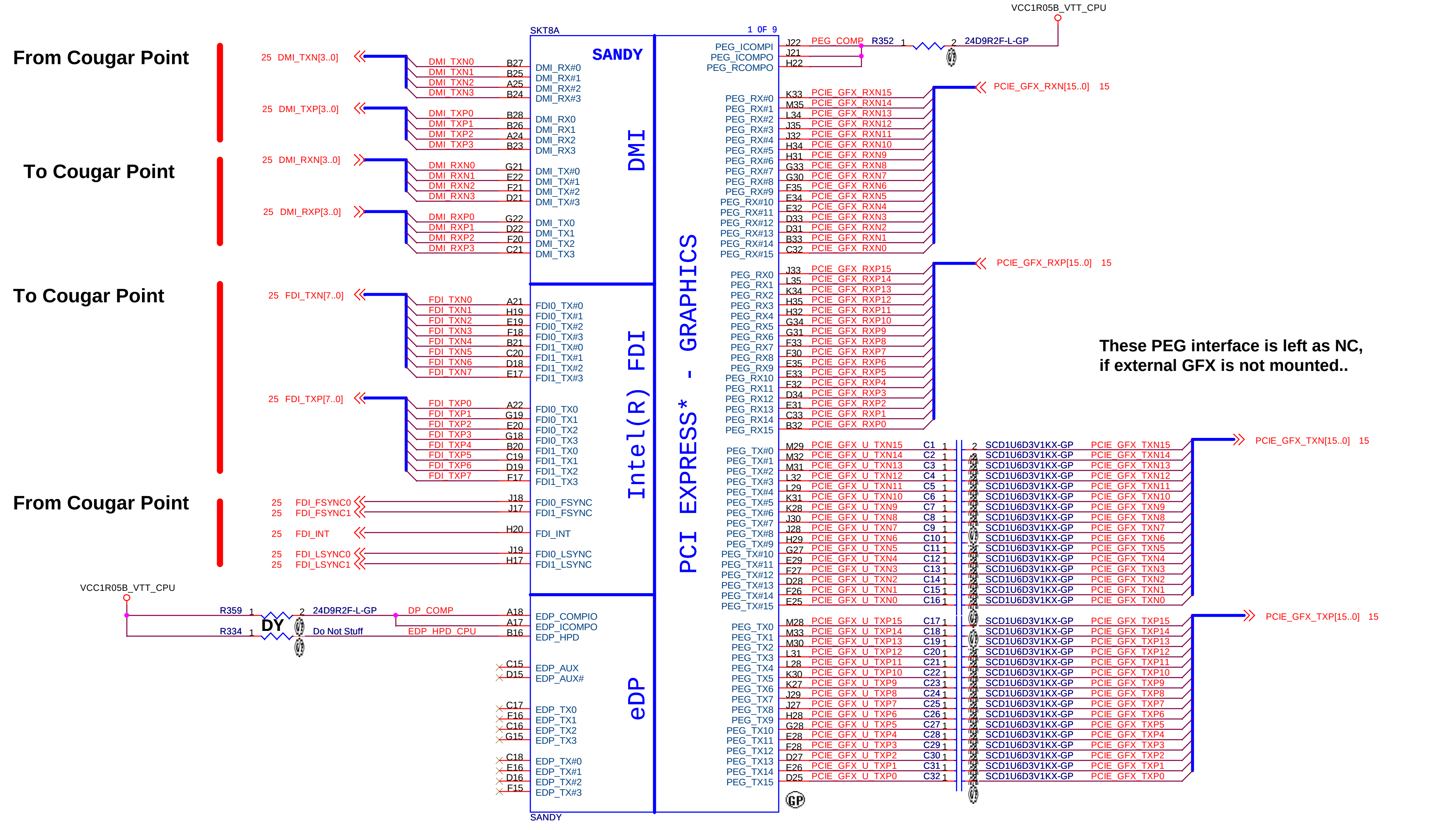
PCI TABLE

DEVICE	IDSEL	IRQ (Default)	REQ# / GNT#
MINIPCI SLOT	AD18	F, G	REQ# 3/ GNT#3
CARDBUS R5C811	AD16	SERIRQ	REQ#0 / GNT#0
USB UHCI	AD29	A, C, D	
USB 2.0 EHCI	AD29	H	
DMI-to-PCI/ AC97 Modem/ AC97 Audio	AD30	 B B	
LPC Bridge IDE SATA SMBus	AD31	 C C B	
PCI Express	AD28	A, B, C, D	

BOM

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Taipei Hsien 221, Taiwan, R.O.C.

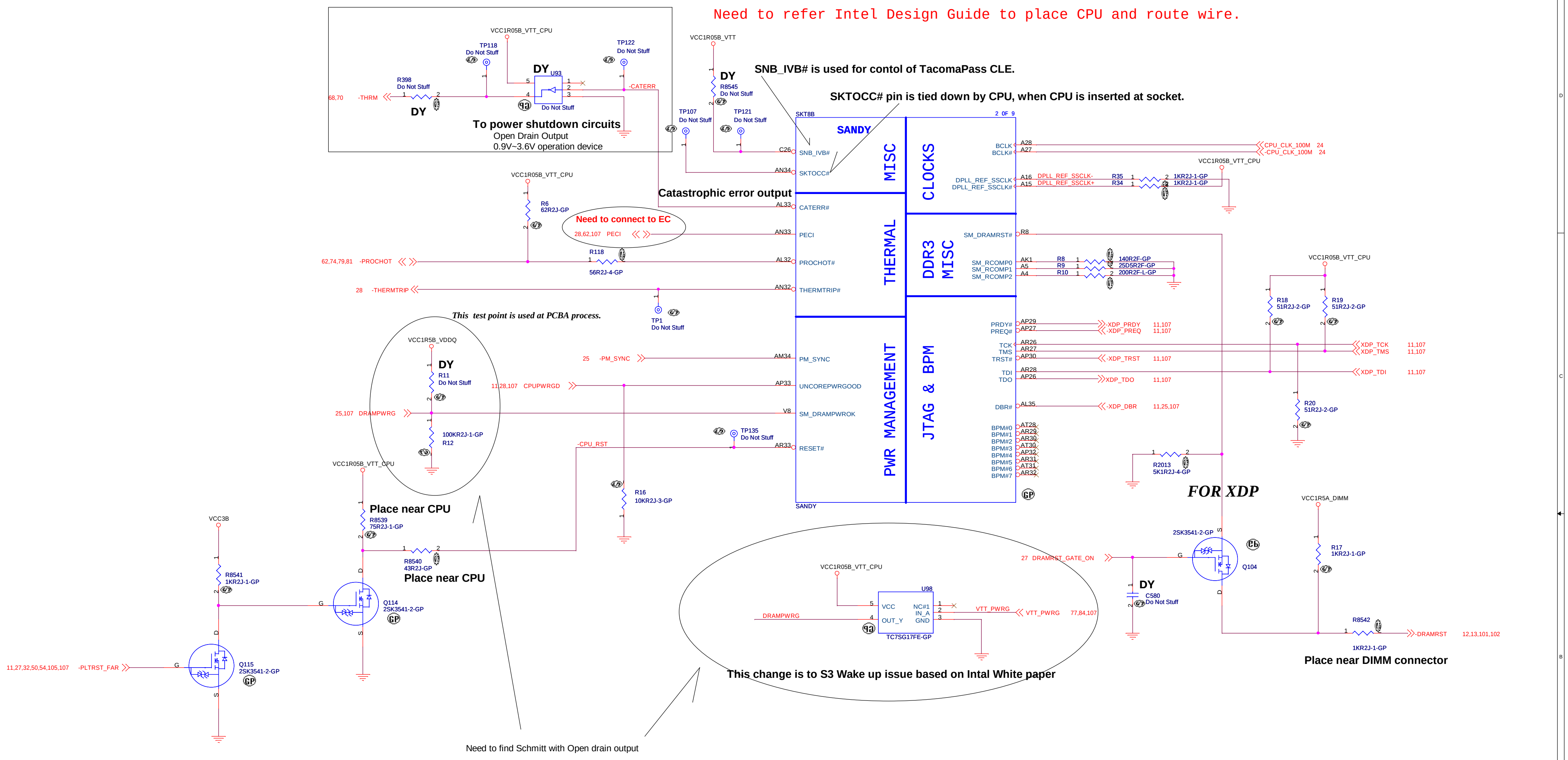
Title	EC HISTORY		
Size A3	Document Number	Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 2 of 107		



BOM

緯創資通 **Wistron Corporation**
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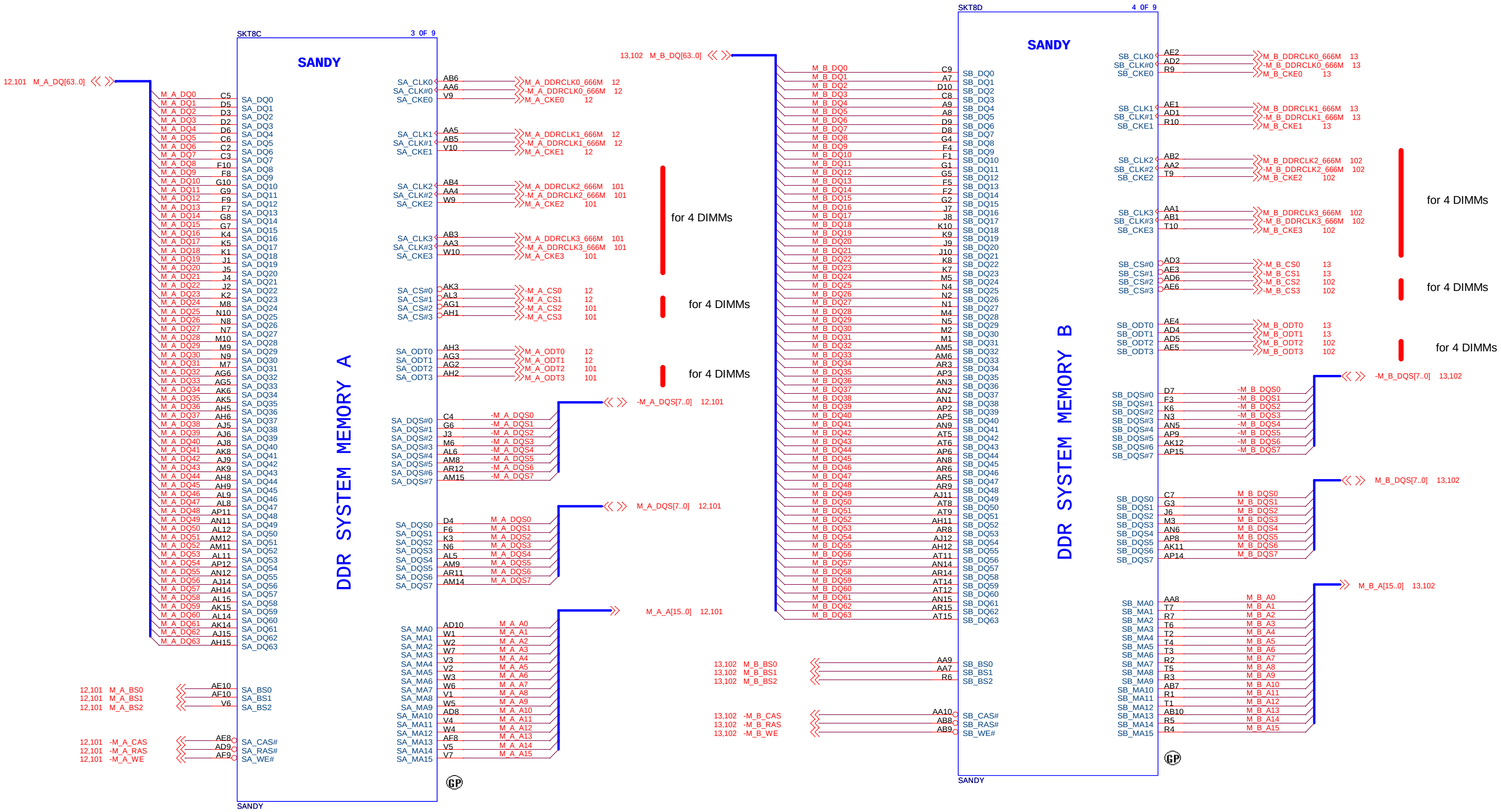
Title	*CPU(1/7):DMI/PEG/FDI*	
Size A3	Document Number **Kendo-3 WS**	Rev SA
Date: Tuesday, December 07, 2010	Sheet 3 of 107	



BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title		
CPU (2/7):CLK/MISC/JTAG		
Size A2	Document Number Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 4 of 107	



BOM

緯創資通 **Wistron Corporation**

21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **CPU(3/7): DDR3 CH-A/CH-B**		
Size: A2	Document Number: **Kendo-3 WS**	Rev: SA
Date: Tuesday, December 07, 2010	Sheet 5 of 107	

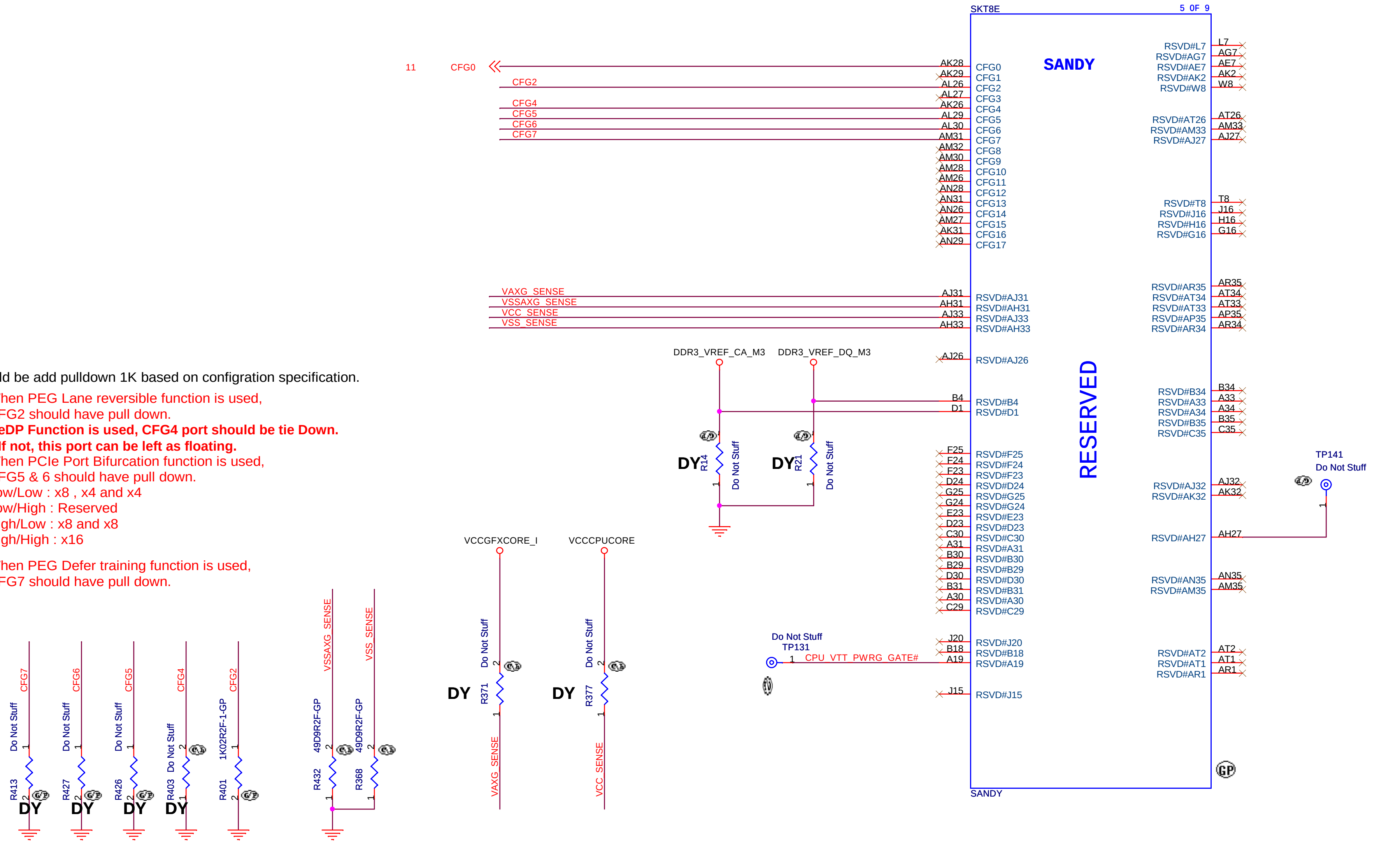
Should be add pulldown 1K based on configration specification.

When PEG Lane reversible function is used,
CFG2 should have pull down.

eDP Function is used, CFG4 port should be tie Down.
If not, this port can be left as floating.

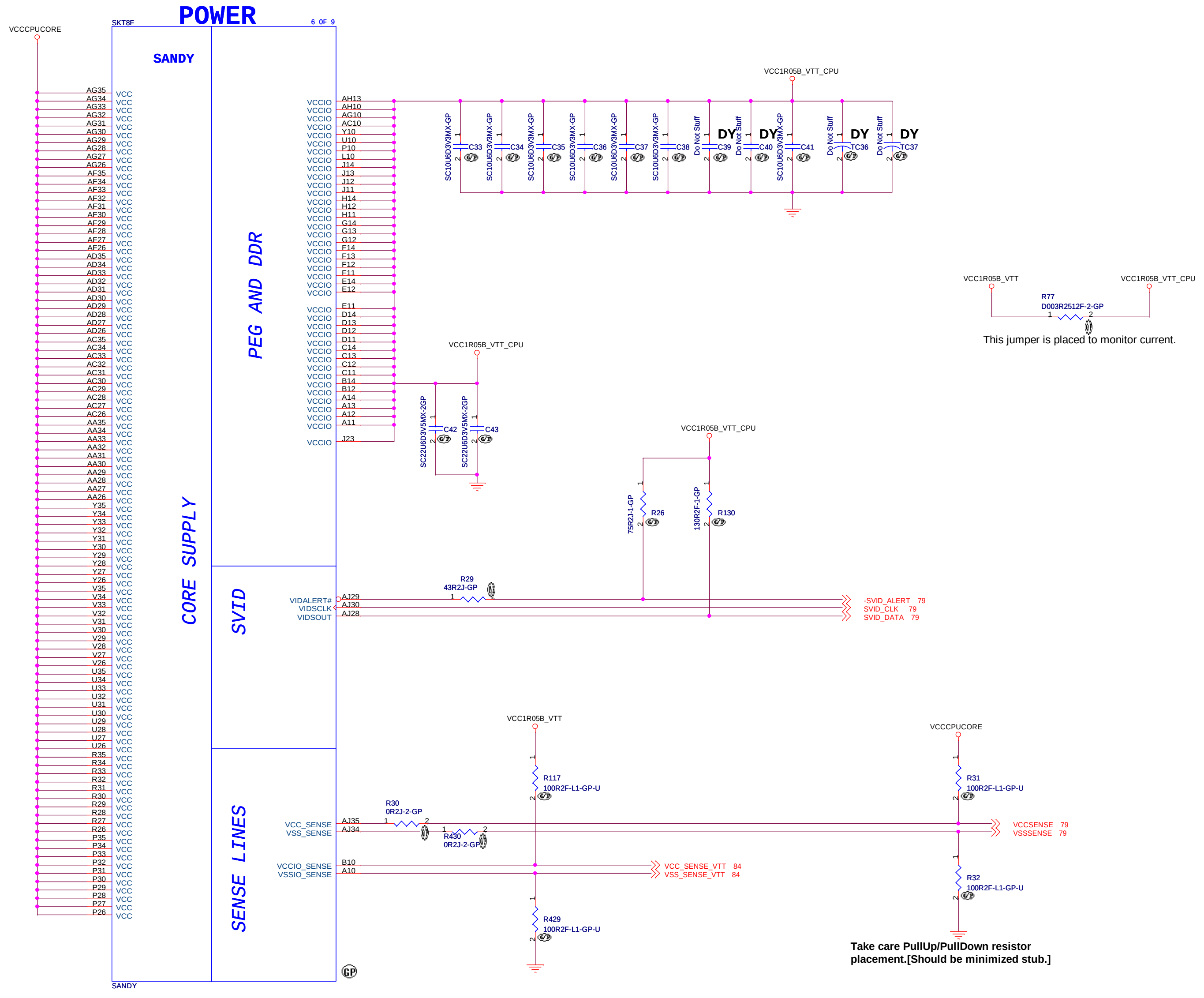
When PCIe Port Bifurcation function is used,
CFG5 & 6 should have pull down.
Low/Low : x8 , x4 and x4
Low/High : Reserved
High/Low : x8 and x8
High/High : x16

When PEG Defer training function is used,
CFG7 should have pull down.



BOM

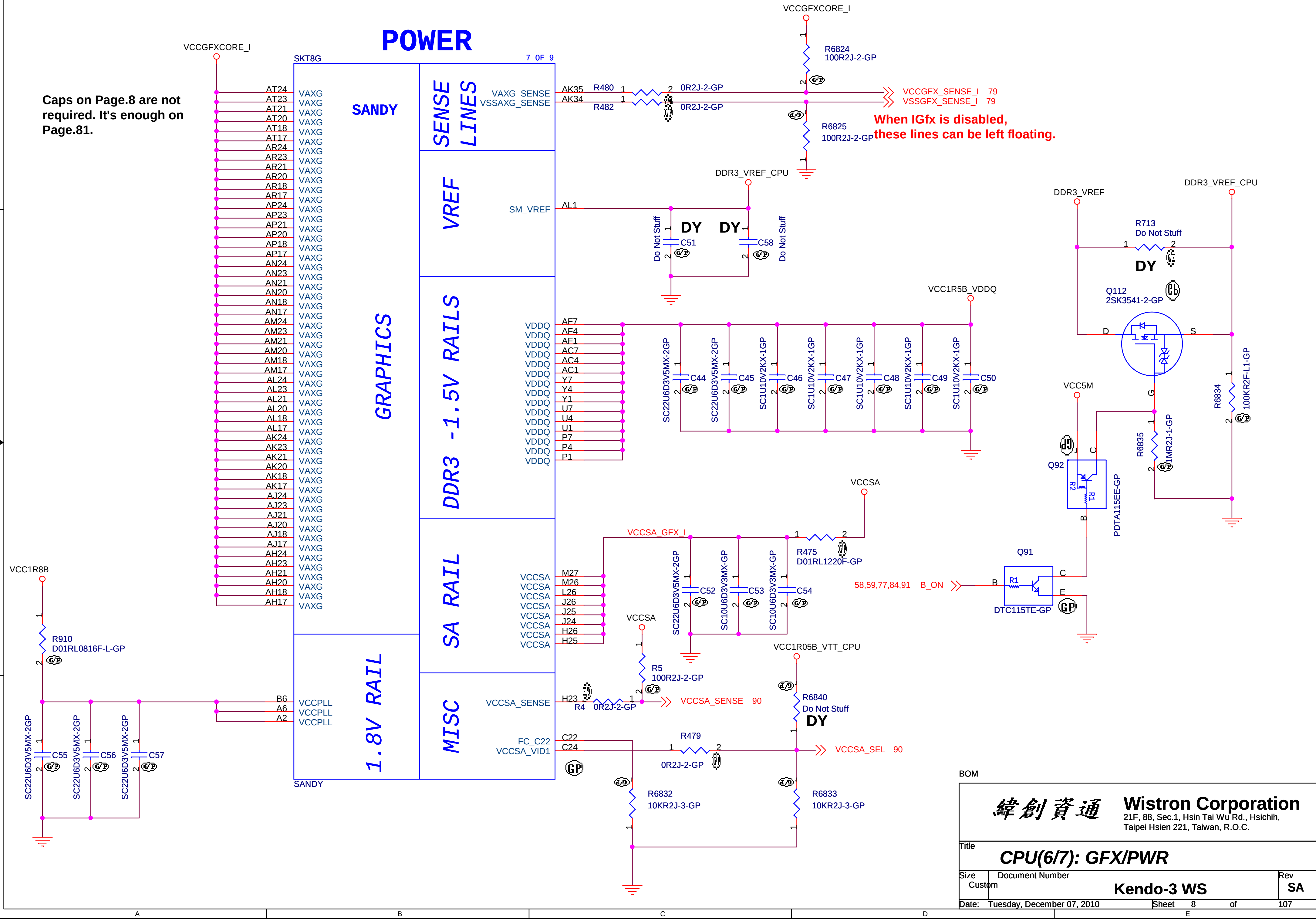
緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	**CPU(4/7): CFG/RSVD**
Size A3	Document Number **Kendo-3 WS** — Rev **SA**
Date: Tuesday, December 07, 2010	Sheet 6 of 107



BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	CPU(5/7): PWR	
Size A2	Document Number Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 7 of 107	



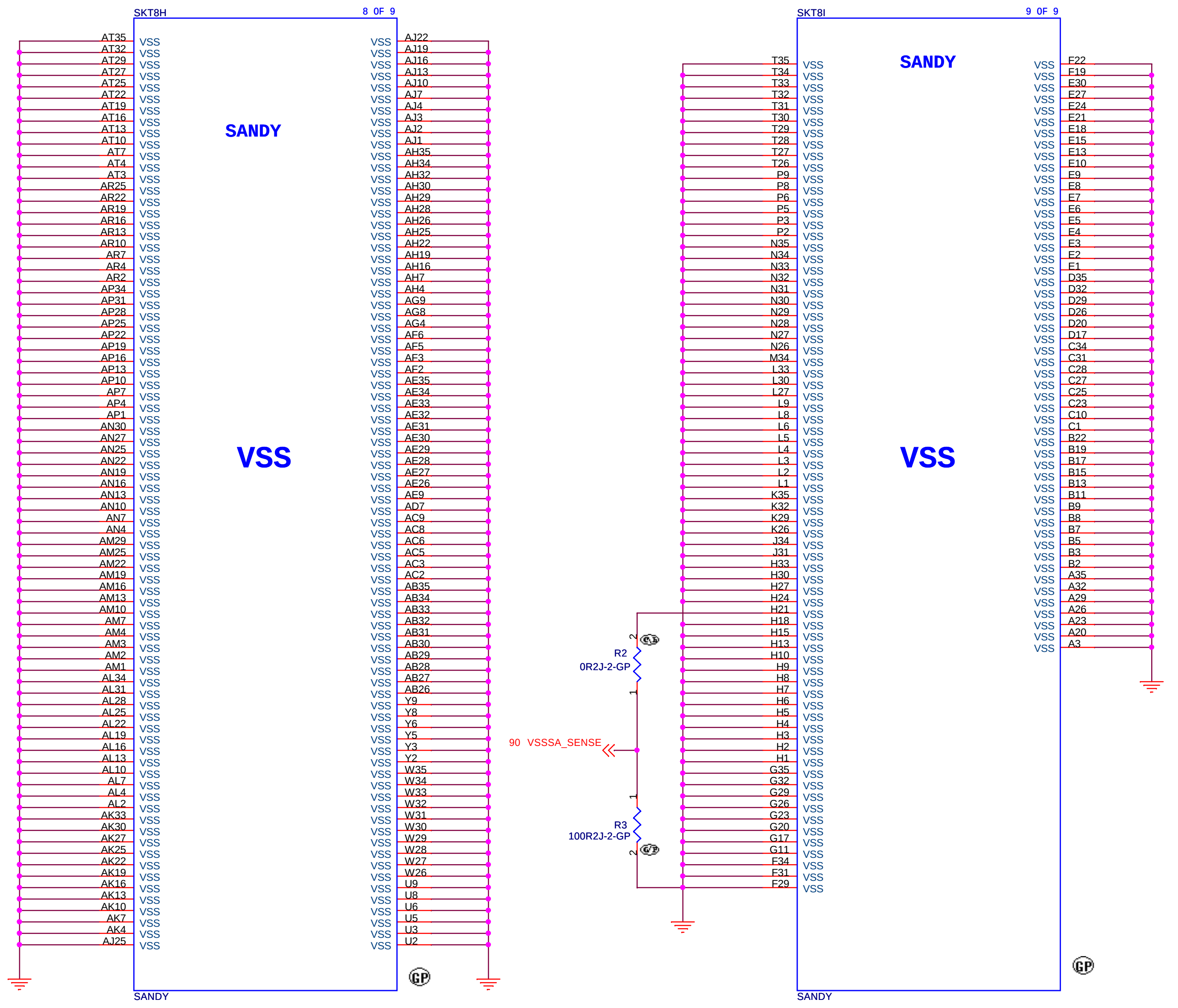
緯創資通 **Wistron Corporation**

21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **CPU(6/7): GFX/PWR**

Size	Document Number	Rev
Custom	Kendo-3 WS	SA

Date: Tuesday, December 07, 2010 Sheet 8 of 107



BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title
CPU(7/7): GND

Size	Document Number	Rev
A3	Kendo-3 WS	SA

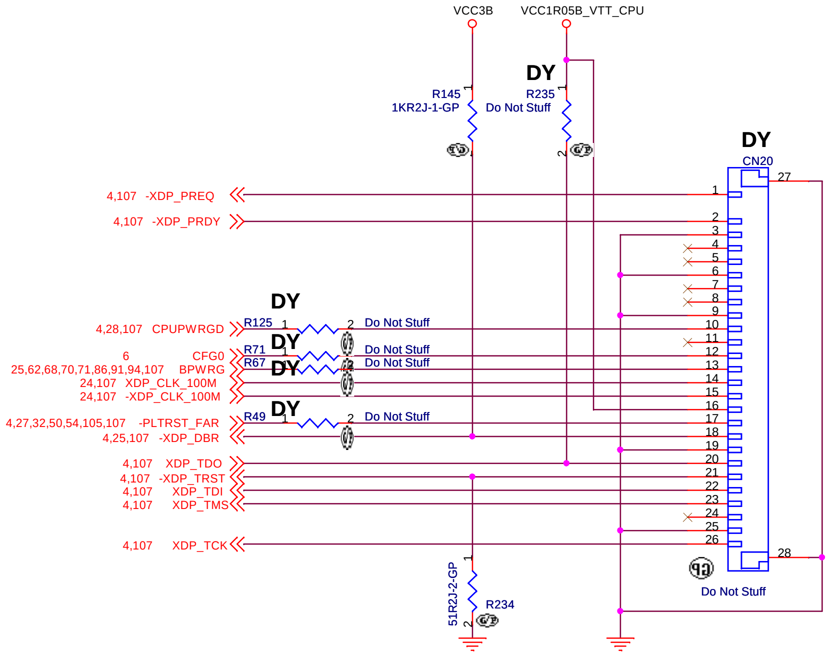
Date: Tuesday, December 07, 2010 Sheet 9 of 107

BLANK

BOM

SIGNAL	REF DES	ENABLE	DISABLE
TDO	R235	ASM	NO_ASM
TRST#	R234	ASM	ASM
DBRST#	R145	ASM	ASM
RESET#	R49	ASM	NO_ASM
CFG0	R71	ASM	NO_ASM
PWRGD	R125	ASM	NO_ASM
BPWRG	R67	ASM	NO_ASM
	CN20	ASM	NO_ASM

LOGIC



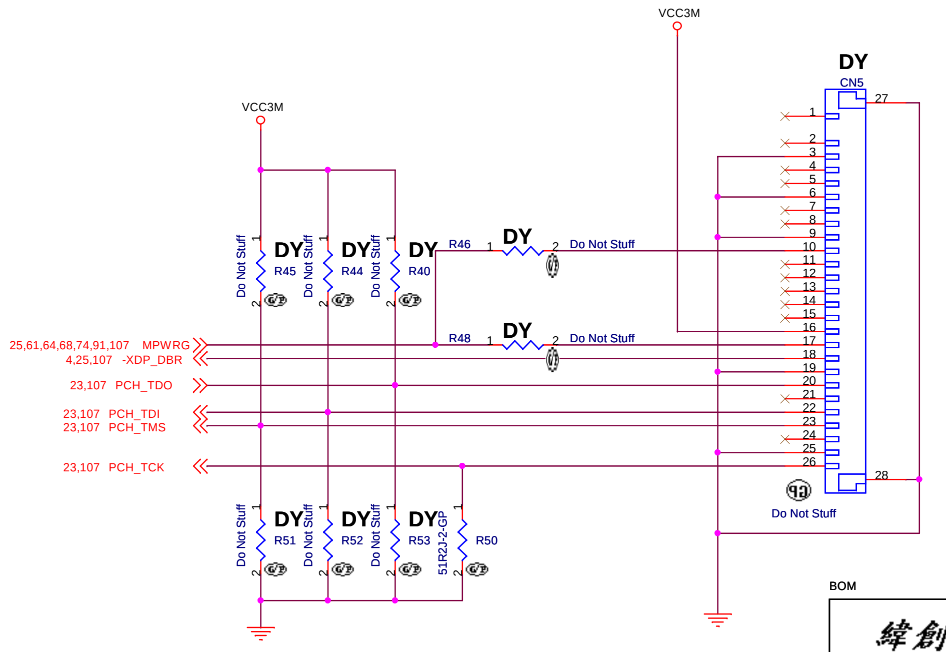
CPU XDP SFF 26pin IF
Pin 1 OBSFN_A0 (PREQ#, I/O)
Pin 2 OBSFN_A1 (PRDY#, I/O)
Pin 3 GND
Pin 4 OBSDATA_A0 (Open, I/O)
Pin 5 OBSDATA_A1 (Open, I/O)
Pin 6 GND
Pin 7 OBSDATA_A2 (Open, I/O)
Pin 8 OBSDATA_A3 (Open, I/O)
Pin 9 GND
Pin 10 HOOK0 (PWRGD, In)
Pin 11 HOOK1 (BP_PWRGD_RST#, Out)
Pin 12 HOOK2 (CFG0, Out)
Pin 13 HOOK3 (vr_READYSYS_PWROK,Out)
Pin 14 HOOK4 (BCLK, In)
Pin 15 HOOK5 (BCLK#, In)
Pin 16 VCCOBS_AB (VCCP Voltage of CPU, In)
Pin 17 HOOK6 (RESET#, Out)
Pin 18 HOOK7 (DBR#, Out)
Pin 19 GND
Pin 20 TDO, In
Pin 21 TRST#, Out
Pin 22 TDI, Out
Pin 23 TMS, Out
Pin 24 TCK1 (Open)
Pin 25 GND
Pin 26 TCK0 ,Out

In production, All of parts should be not moounted except of pulldown 51 ohm on TCK.

SIGNAL	REF DES	ENABLE	DISABLE
TDO	R40 R53	220 100	NO_ASM NO_ASM
TMS	R45 R51	220 100	NO_ASM NO_ASM
TDI	R44 R52	220 100	NO_ASM NO_ASM
TCK	R50	51	51
MPWRG	R46 R48	ASM ASM	NO_ASM NO_ASM
	CN5	ASM	NO_ASM

LOGIC

DEBUG Interface for PCH.



PCH XDP SFF 26pin IF
Pin 1 OBSFN_A0 (Open), I/O)
Pin 2 OBSFN_A1 (Open), I/O)
Pin 3 GND
Pin 4 OBSDATA_A0 (Open, I/O)
Pin 5 OBSDATA_A1 (Open, I/O)
Pin 6 GND
Pin 7 OBSDATA_A2 (Open, I/O)
Pin 8 OBSDATA_A3 (Open, I/O)
Pin 9 GND
Pin 10 HOOK0 (RSMRST#, In)
Pin 11 HOOK1 (BP_PWRGD_RST#, Out)
Pin 12 HOOK2 (Open)
Pin 13 HOOK3 (Open)
Pin 14 HOOK4 (Open)
Pin 15 HOOK5 (Open)
Pin 16 VCCOBS_AB (3.3VSUS, In)
Pin 17 HOOK6 (RSMRST#, Out)
Pin 18 HOOK7 (DBR#, Out)
Pin 19 GND
Pin 20 TDO (JTAG, In)
Pin 21 TRST# (Open)
Pin 22 TDI (JTAG, Out)
Pin 23 TMS (JTAG, Out)
Pin 24 TCK1 (Open)
Pin 25 GND
Pin 26 TCK0 (JTAG, Out)

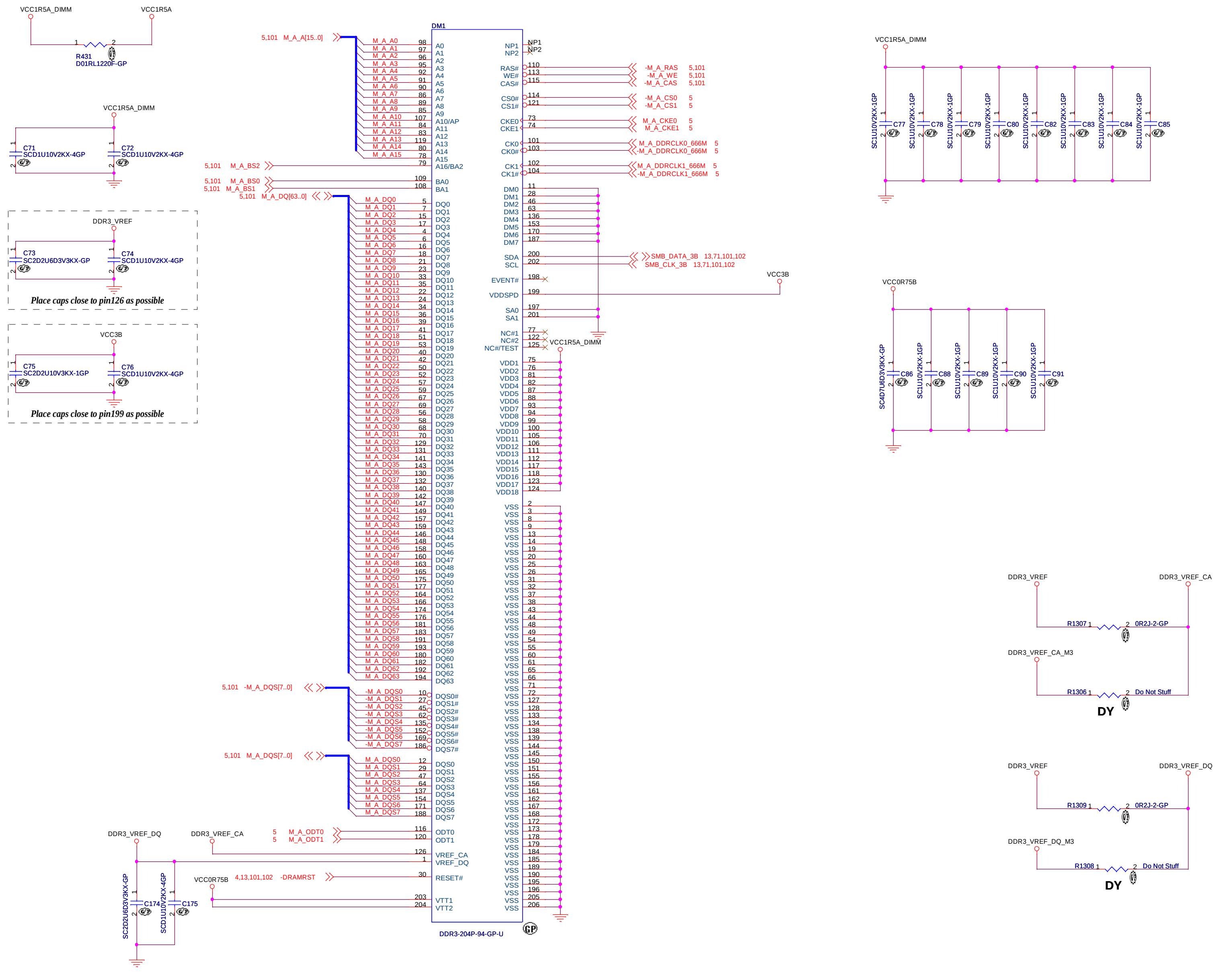
BOM

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: XDP CONNECTOR

Size: A3 | Document Number: Kendo-3 WS | Rev: SA

Date: Tuesday, December 07, 2010 |



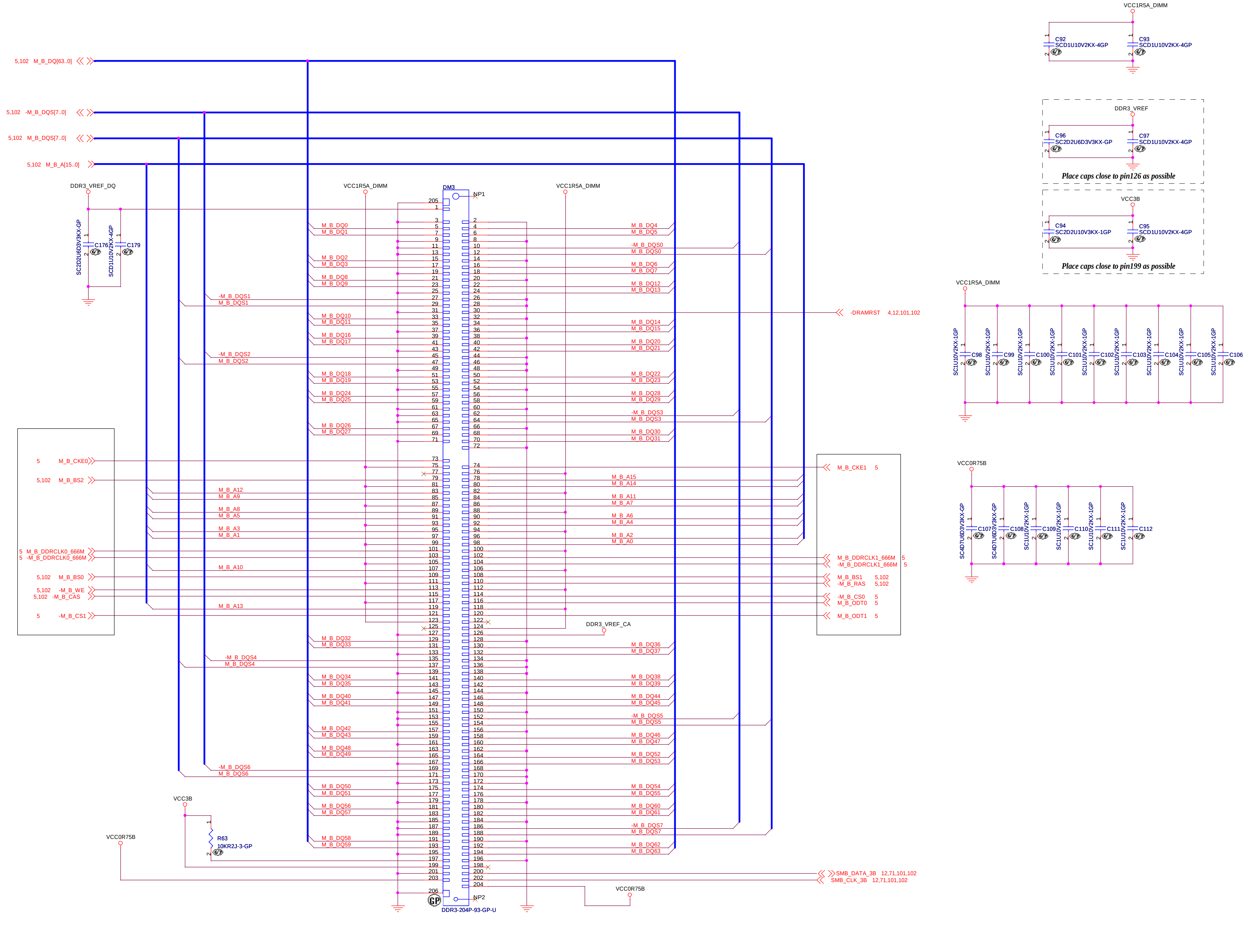
SPD Address : 50h

This connector should be placed on far side from CPU.

BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	DDR3 SODIMM_CH-A_Primary	
Size A2	Document Number: Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 12 of 107	



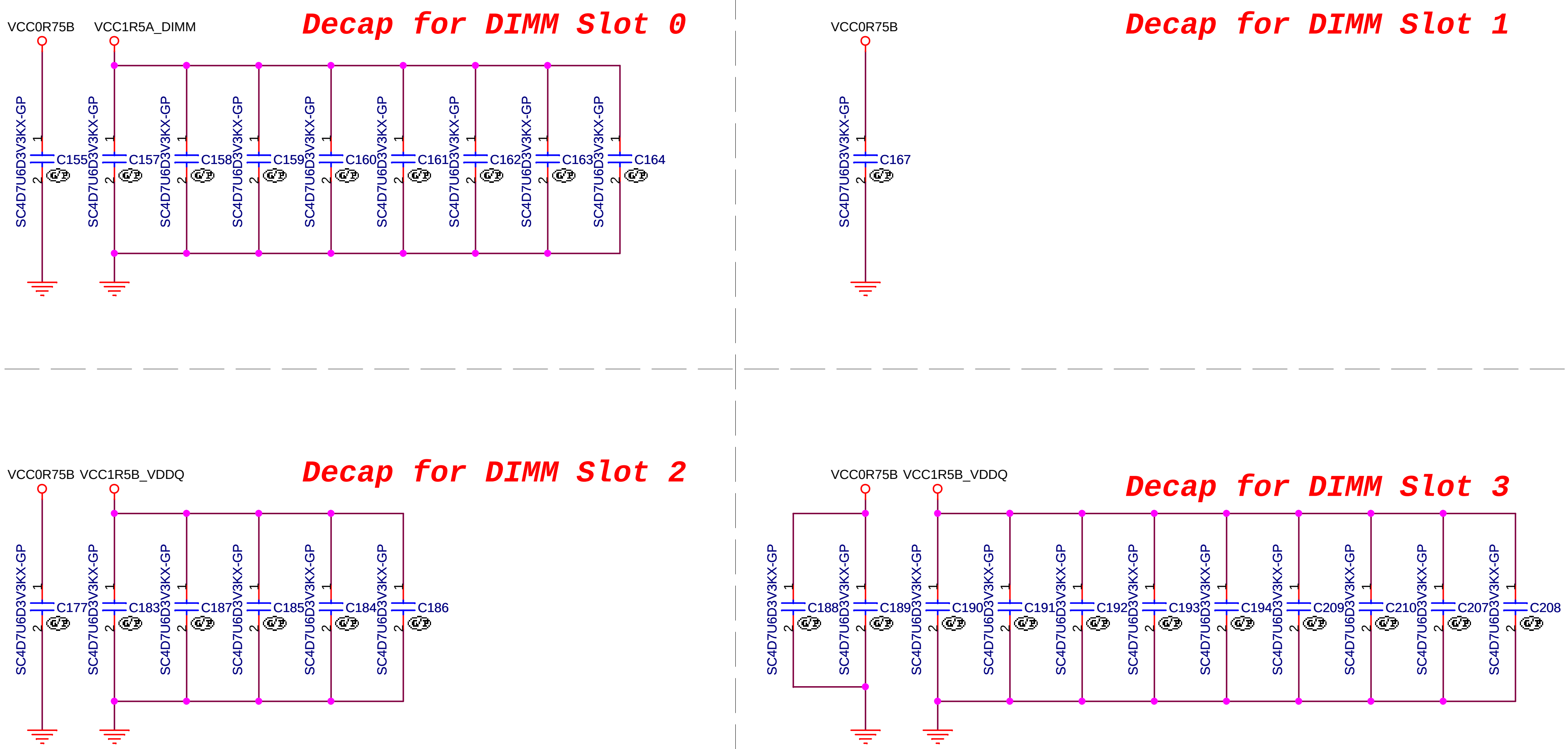
SPD Address : 51h

This connector should be placed on far side from CPU.

BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title		
DDR3 SODIMM_CH-B_Primary		
Size: A2	Document Number: **Kendo-3 WS**	Rev: SA
Date: Tuesday, December 07, 2010	Sheet 13 of 107	



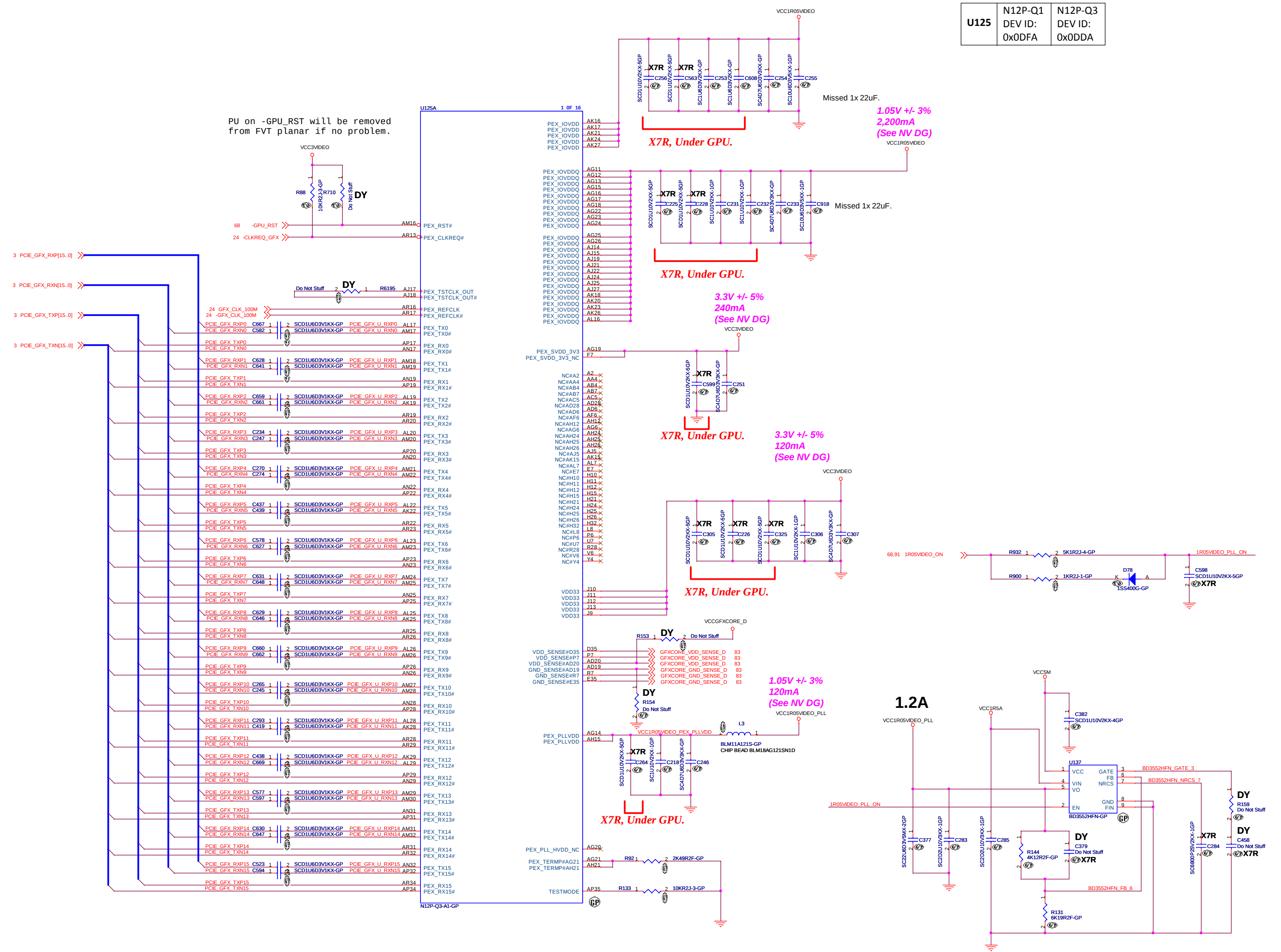
BOM

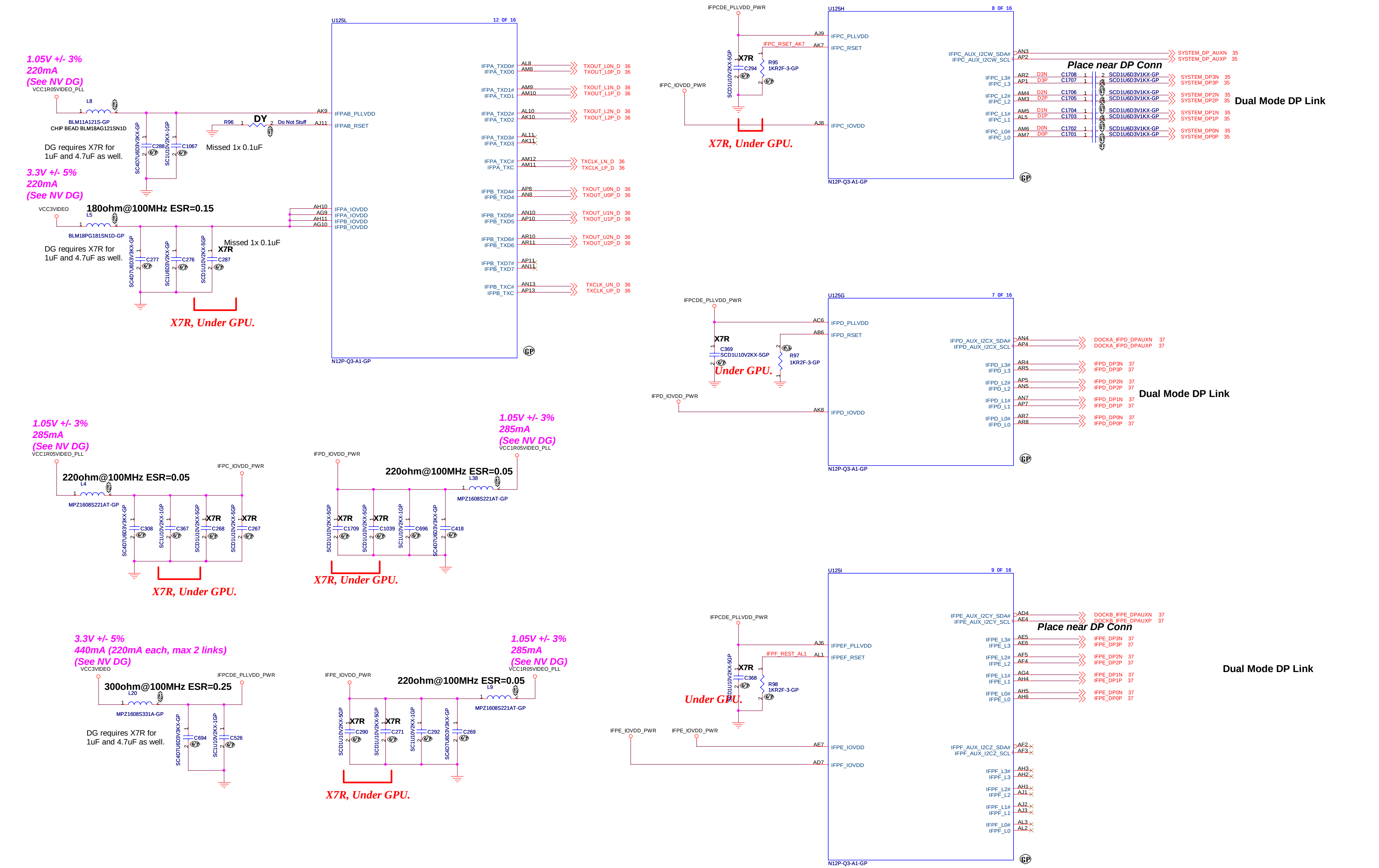
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: **DECAP For DIMMs**		
Size: A4	Document Number: **Kendo-3 WS**	Rev: **SA**
Date: Tuesday, December 07, 2010	Sheet 14 of 107	

TABLE
KENDO NVIDIA

U125	N12P-Q1 DEV ID: 0x0DFA	N12P-Q3 DEV ID: 0x0DDA

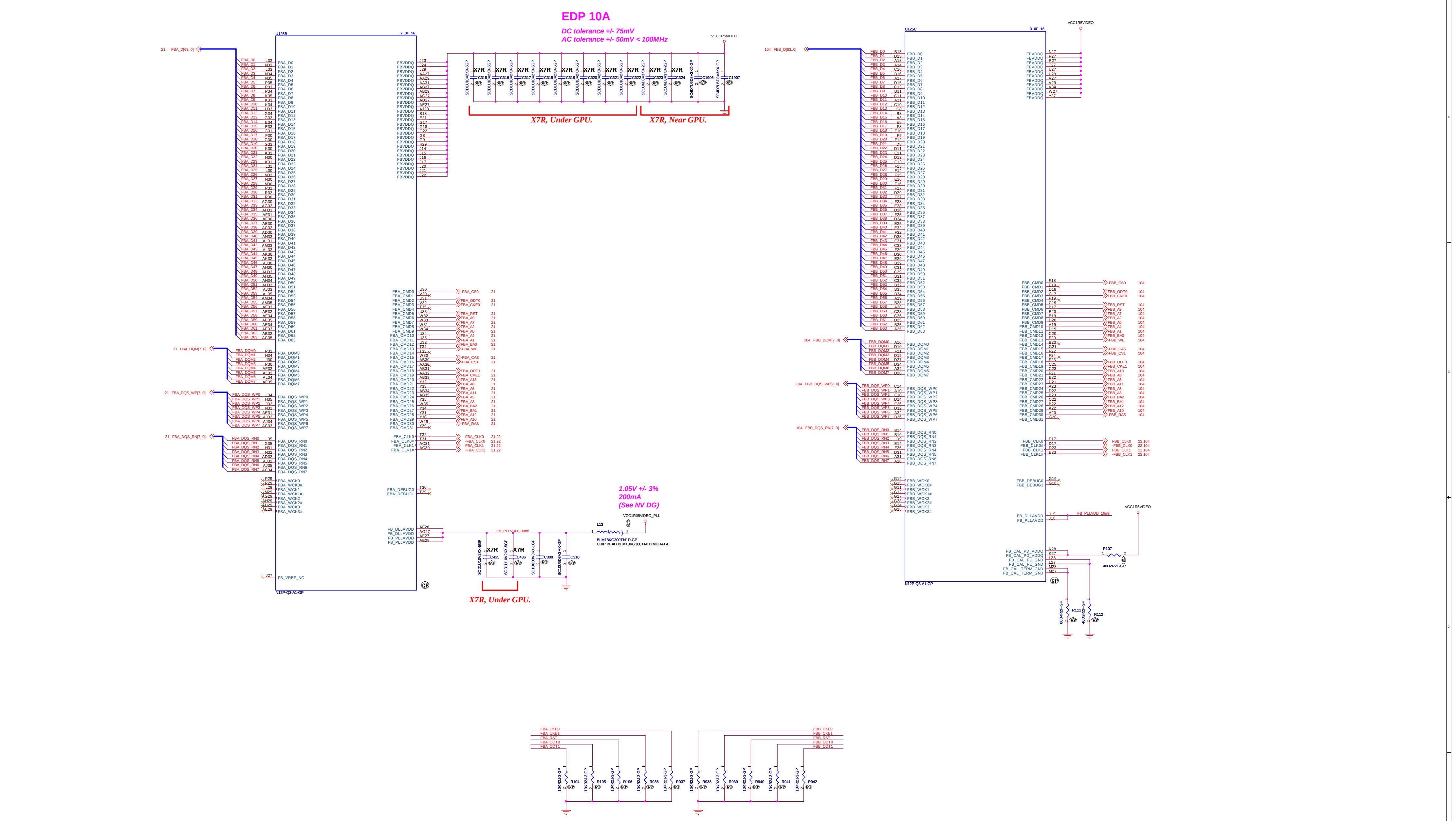




BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

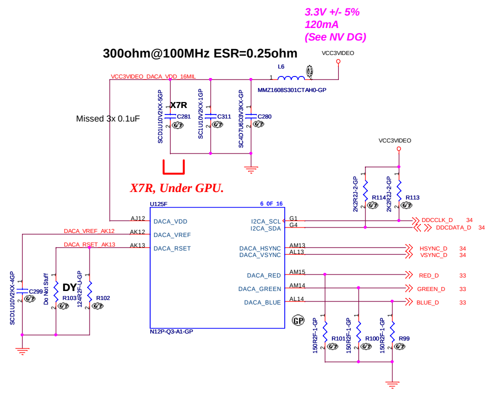
Title	N12P-Q1/Q3 (2/6): DIGITAL OUT	
Size A2	Document Number Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 16 of 107	

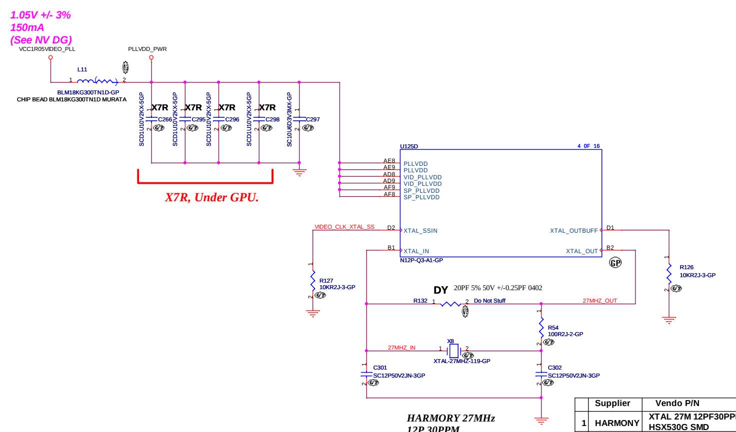


BOM

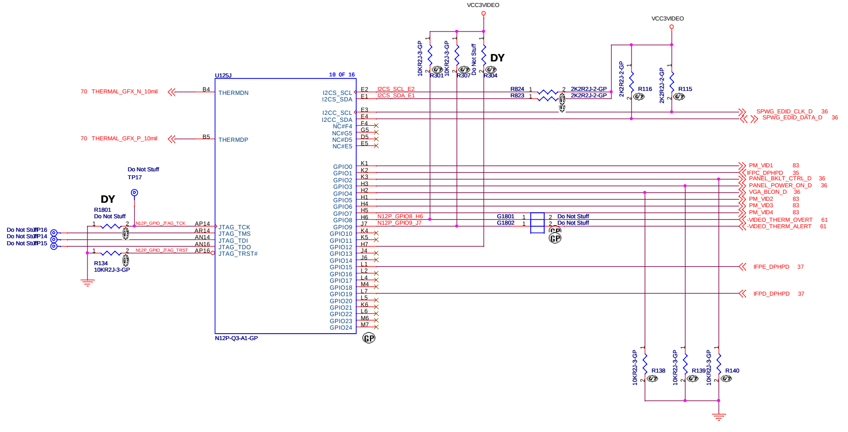
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

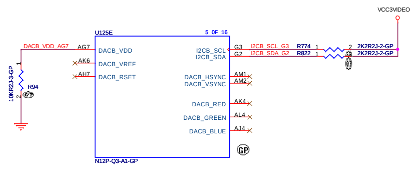
Title		
N12P-Q1/Q3 (3/6): VRAM I/F		
Size: A1	Document Number: Kendo-3 WS	Rev: SA
Date: Tuesday, December 07, 2010	Sheet 17 of 107	



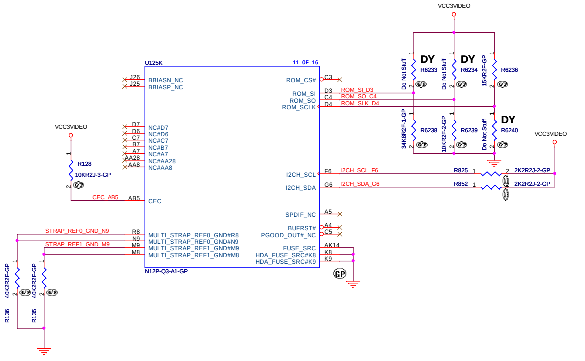


	Supplier	Vendo P/N	WISTRON P/N
1	HARMONY	XTAL 27M 12PF30PPM HSX530G SMD	82.30034.521
2	TXC	XTAL 27MHZ 12PF30PPM 5*3.2 SMD	82.30034.771
3			





I2CA=>CRT, I2CC=>LVDS.



TABLE

KENDO VIDEO MEMORY

	HYNIX 128Mx16 0110	SAMSUNG 128Mx16 0111
RO M_SIPD R6238	34.8Kohm 64.34825.6DL	45.3Kohm 64.45325.6DL

LOGIC

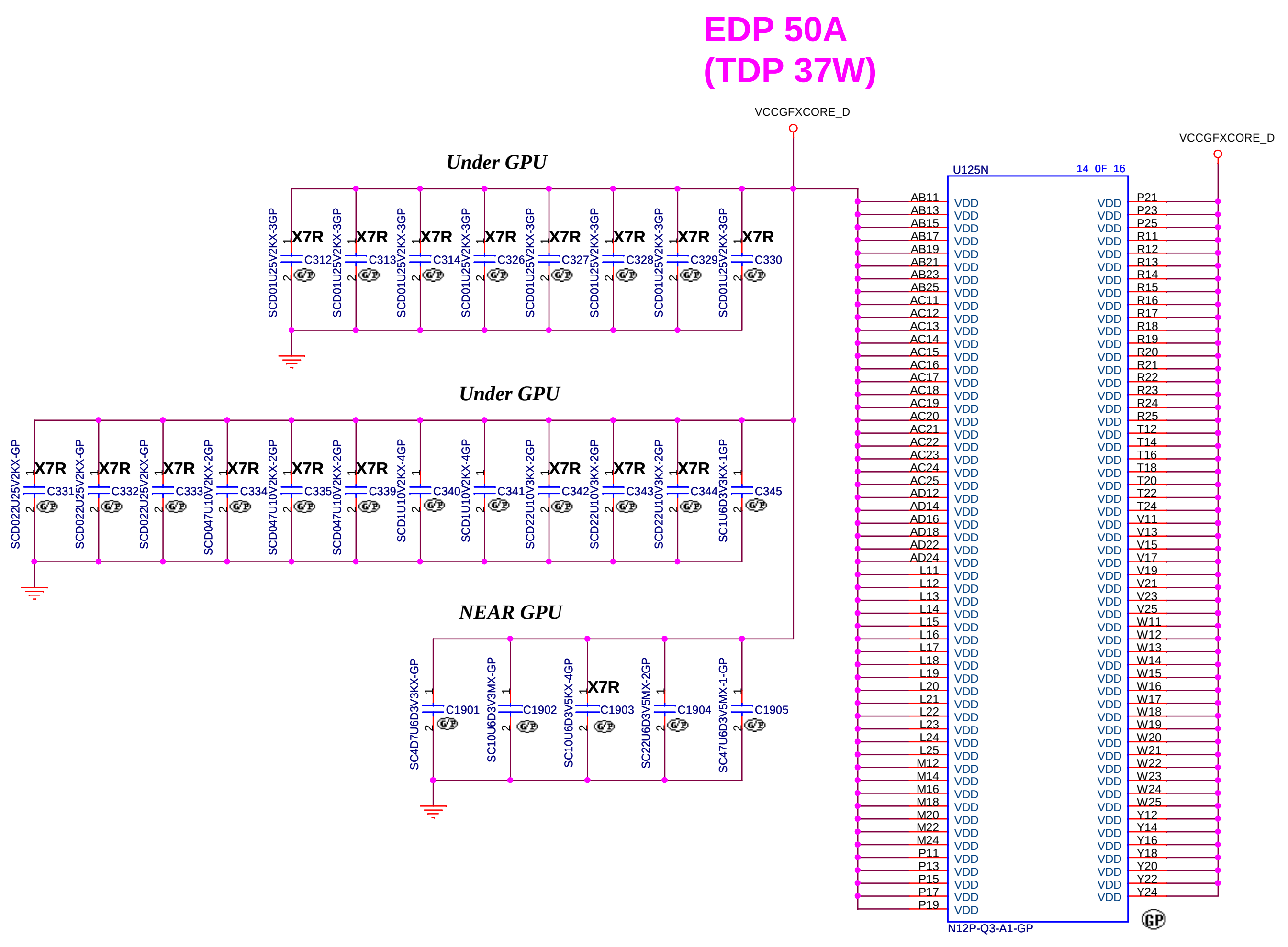
ROM

Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: N12P-Q1/Q3 (4/6): GPIO

Size: A1 | Document Number: Kendo-3 WS | Rev: SA

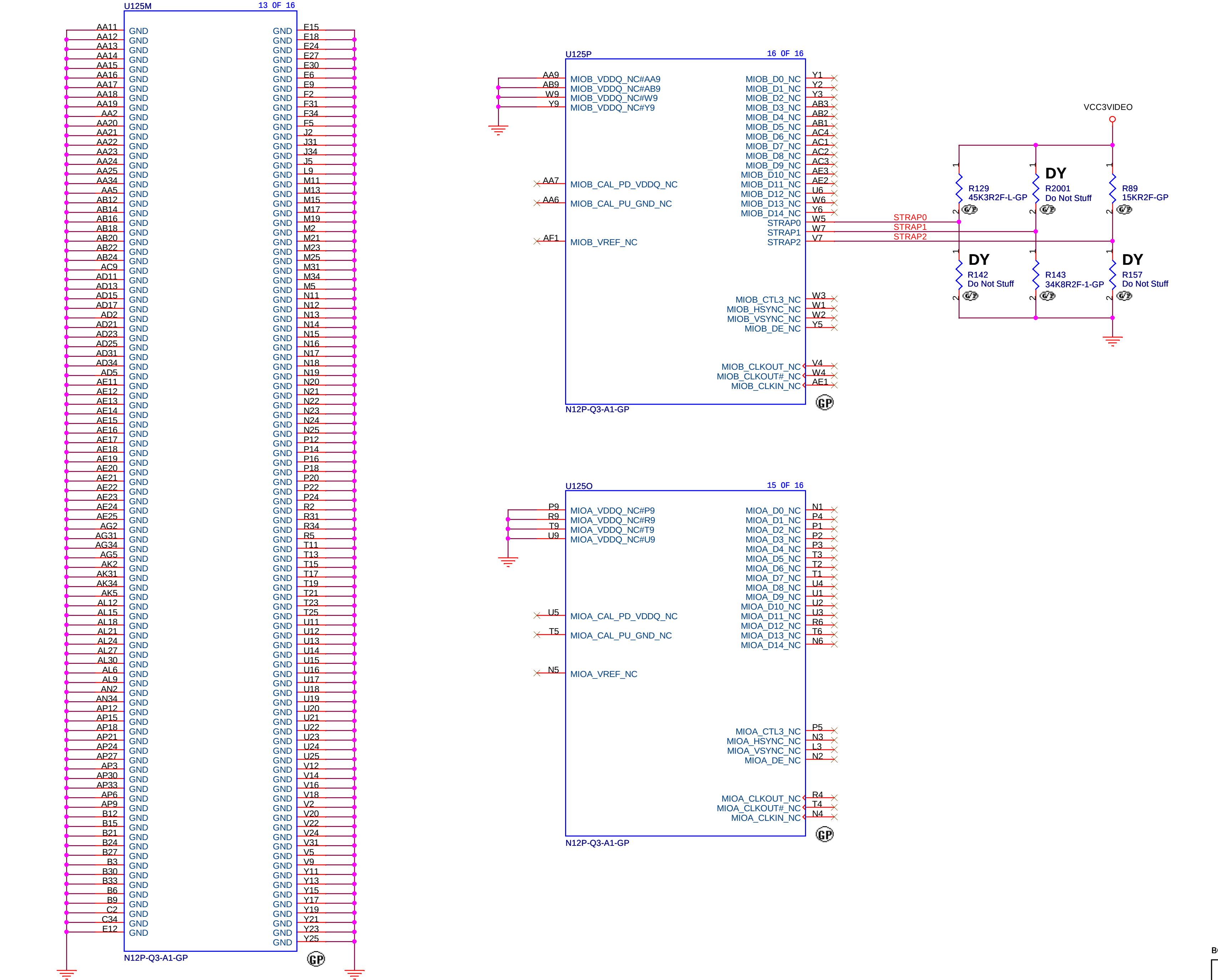
Date: Tuesday, December 07, 2010 | Sheet 18 of 107



BOM

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Taipei Hsien 221, Taiwan, R.O.C.

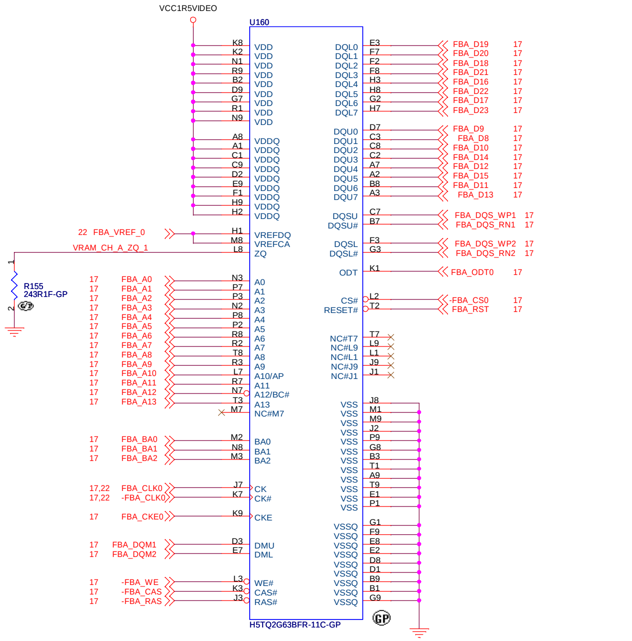
Title	**N12P-Q1/Q3 (5/6): POWER**	
Size A3	Document Number **Kendo-3 WS**	Rev **SA**
Date: Tuesday, December 07, 2010	Sheet 19 of 107	

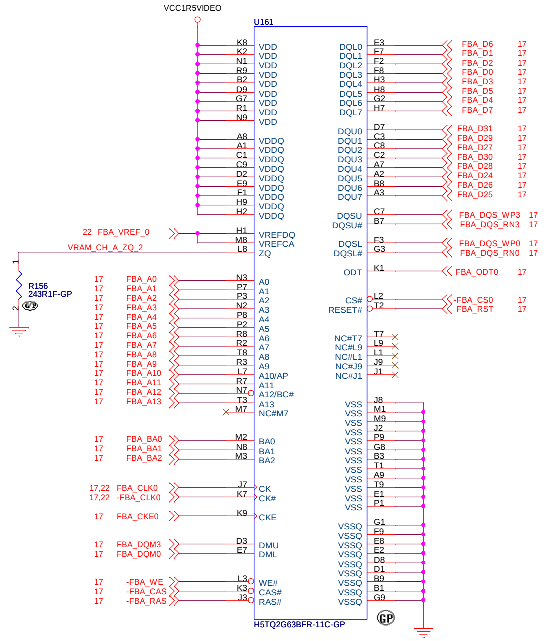


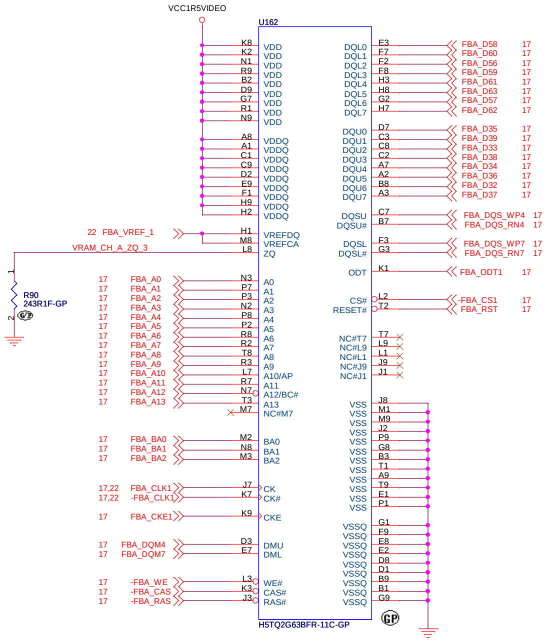
BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

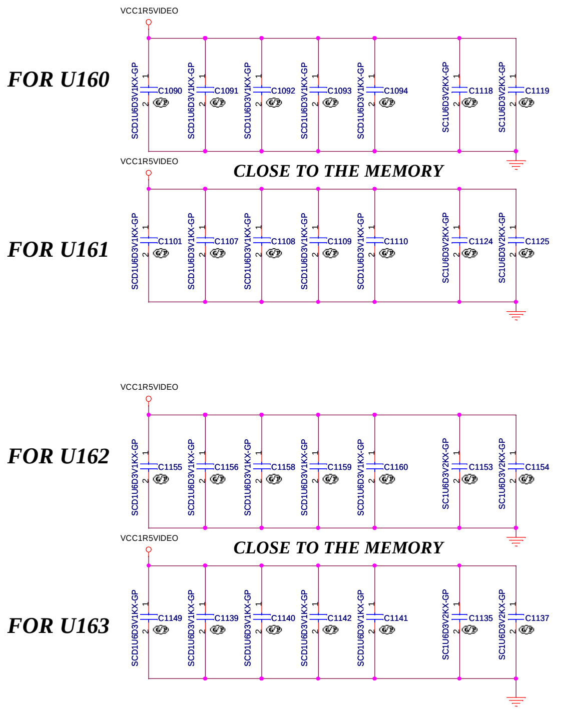
Title	N12P-Q1/Q3 (6/6): GND	
Size A3	Document Number: Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 20 of 107	



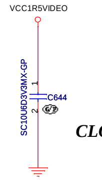




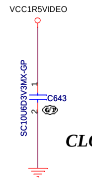
FB CMD mapping Mode D-N12x



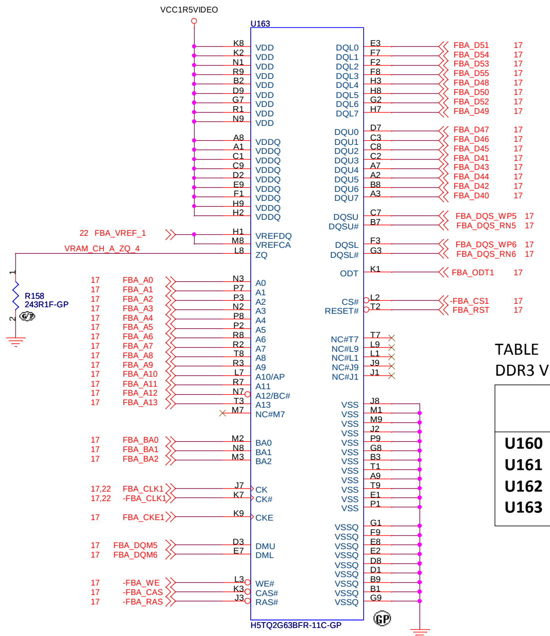
DG requires 4x0.1uF and 8x1.0uF per VRAM chip



CLOSE TO THE MEMORY



CLOSE TO THE MEMORY



TABLE

DDR3 VIDEO MEMORY FOR N12P-Q1 AND N12P-Q3

	HYNIX 2GBITS (128MX16)	SAMSUNG 2GBITS (128MX16)
U160 U12 U161 U13 U162 U14 U163 U15	H5TQ2G63BFR-11C	K4W2G1646C-HC11

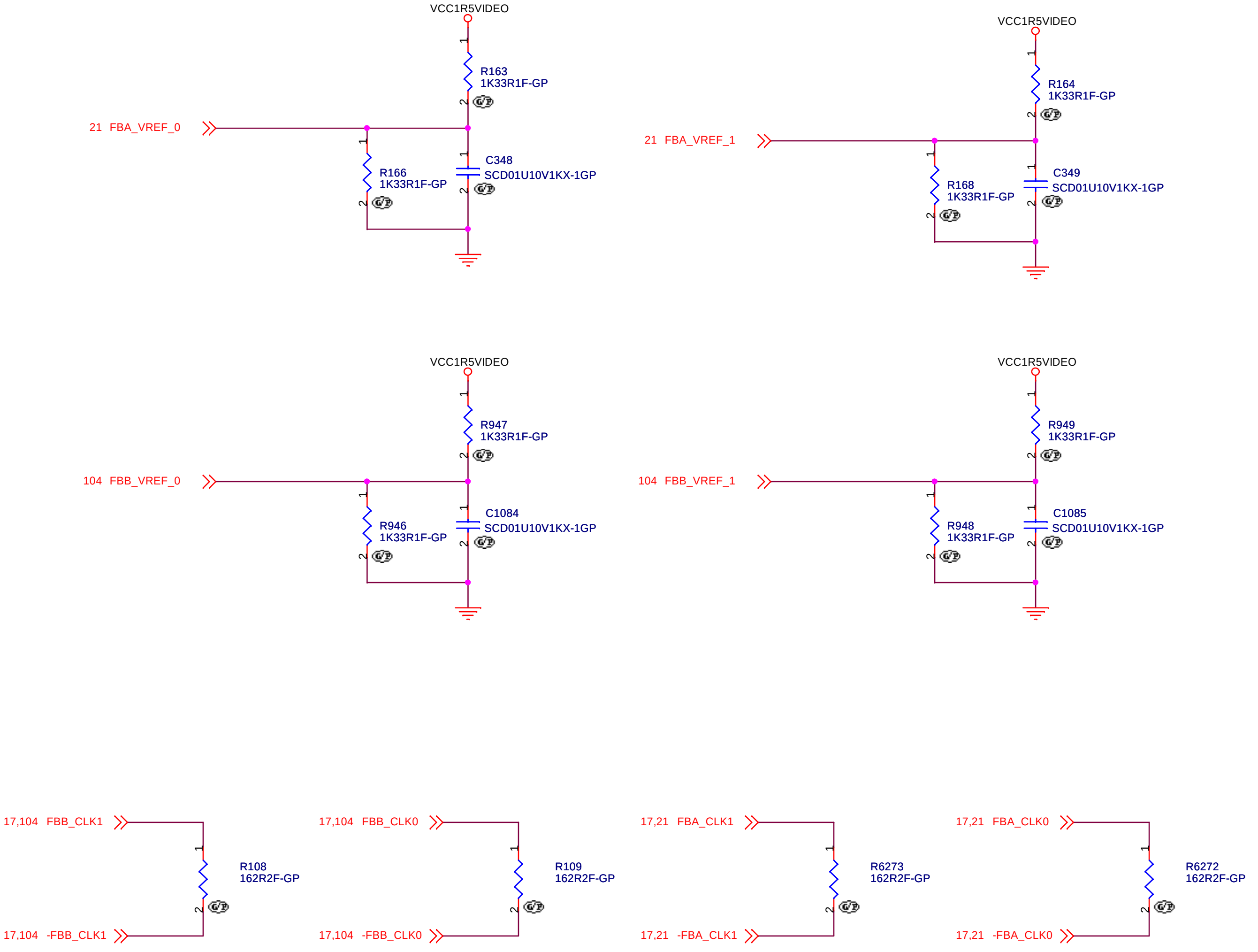
BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **VRAM CHANNEL-A**

Size: A2 | Document Number: Kendo-3 WS | Rev: SA

Date: Tuesday, December 07, 2010 | Sheet 21 of 107



FBCLK Termination

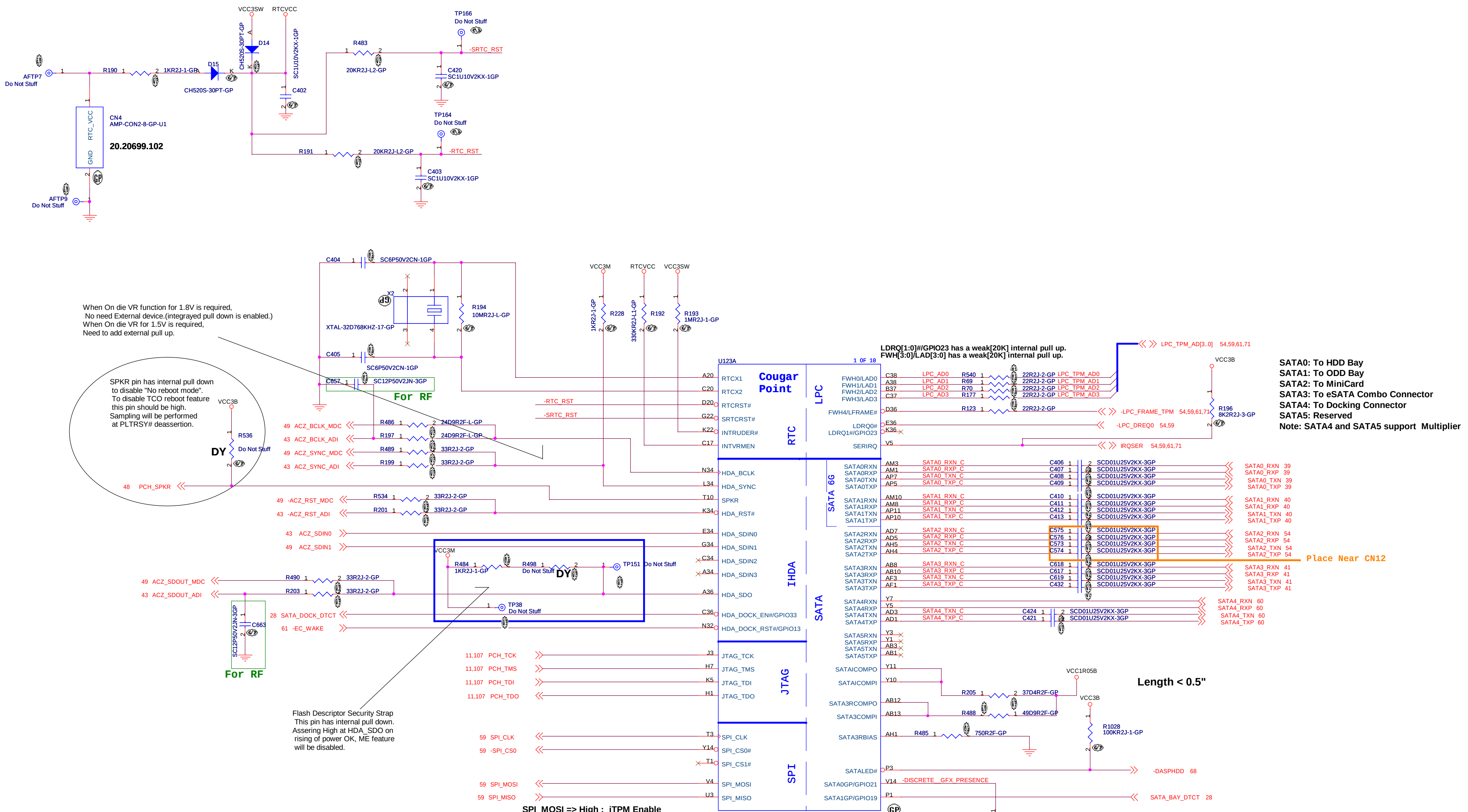
BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title **DYNAMIC MEMORY TERMINATION**

Size	Document Number	Rev
A3	Kendo-3 WS	SA

Date: Tuesday, December 07, 2010 Sheet 22 of 107



SPI_MOSI => High : iTPM Enable
SPI_MOSI has a weak[20K] internal pull down.

SATA_LED# has a weak[20K] internal pull up.

Strap Option on GPIO51/GPIO19
is determing Boot BIOS destination.
High/High means SPI BIOS selection.

Pull high at P.36

INTVRMEM pin should have pull up
resister to enable integrated 1.05V VRM.

HDA_SYNC has a weak[20K] internal pull down.
The pin is low, 1.8V is provided by on die PLL VR.
The pin is high, 1.5V is provided by on die PLL VR.

HDA_BCLK has a weak(20K) internal pull down.

HDA_RST# has a weak(20K) internal pull down.

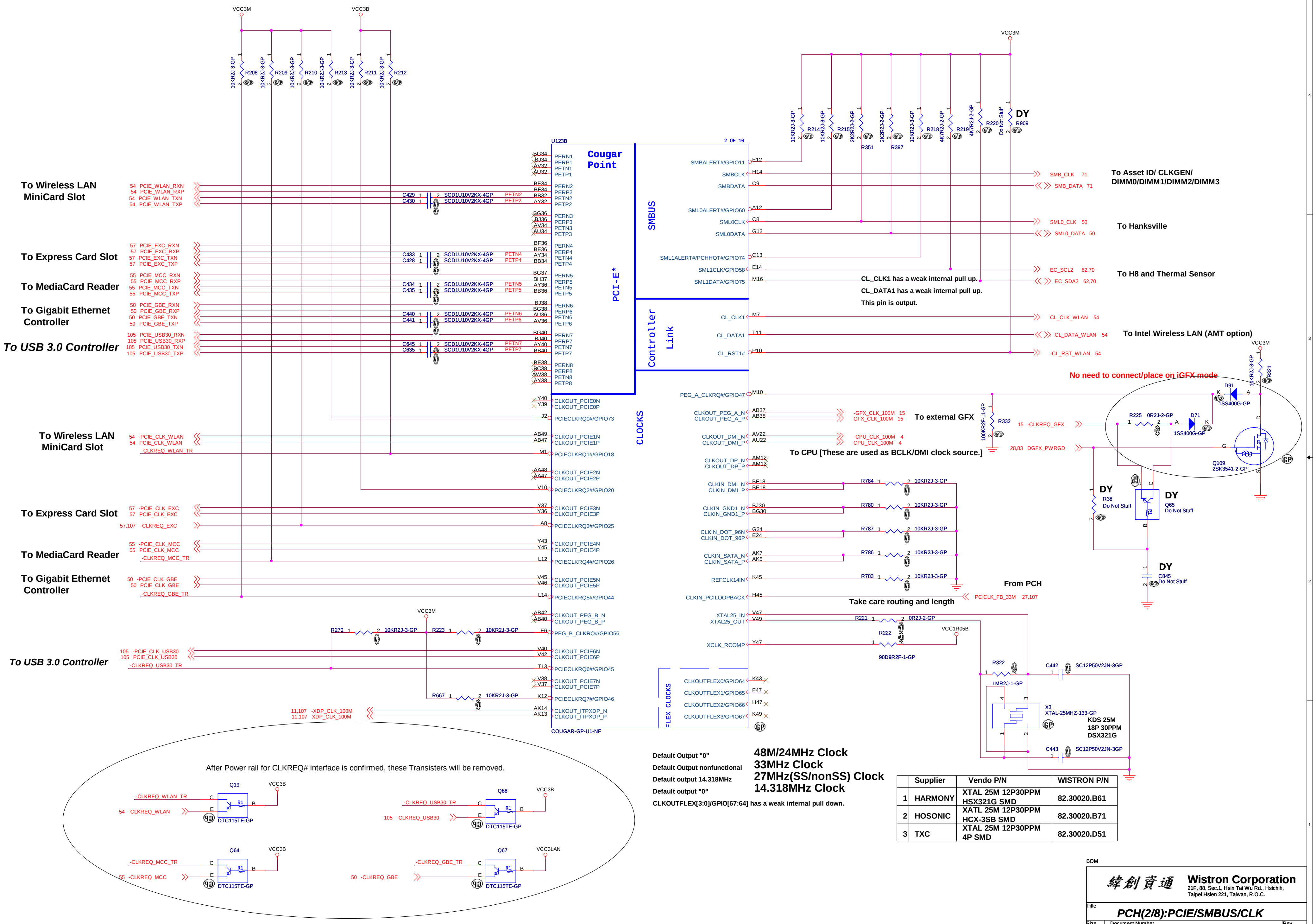
HDA_SDIN[3:0]has a weak(20K) internal pull down.

SPKR has weak[20K] internal pull down..
If external pull up is applied,
PCH will disable TCO timer system reboot function.

HDA_SDO has a weak[20K] internal pull up.
Low : the Flash Descriptor Security will be overridden.
High : The security measures defined in the Flash
descriptor will be in effect.

BOM

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	**PCH (1/8):HDA/JTAG/SATA**
Size A2	Document Number **Kendo-3 WS** — Rev **SA**
Date: Tuesday, December 07, 2010	Sheet 23 of 107



	Supplier	Vendo P/N	WISTRON P/N
1	HARMONY	XTAL 25M 12P30PPM HSX321G SMD	82.30020.B61
2	HOSONIC	XATL 25M 12P30PPM HCX-3SB SMD	82.30020.B71
3	TXC	XTAL 25M 12P30PPM 4P SMD	82.30020.D51

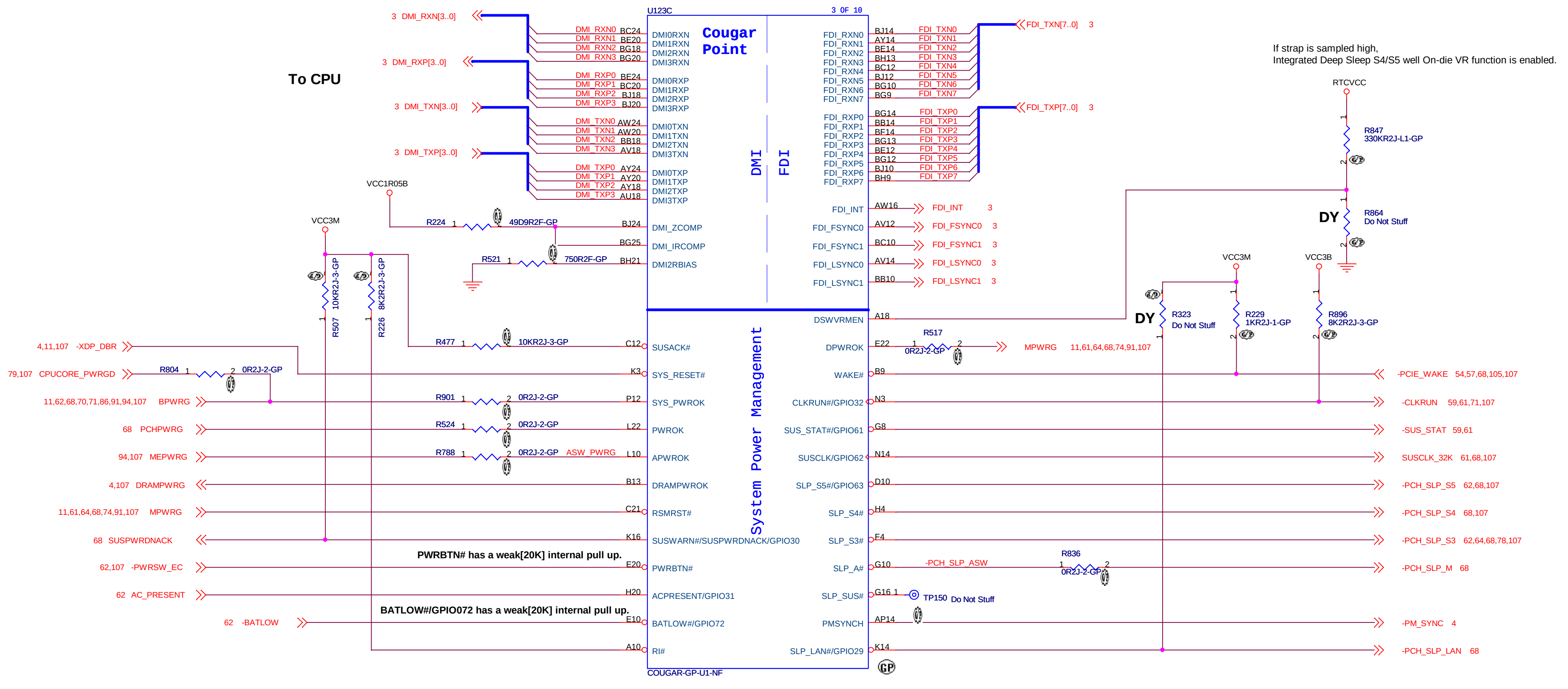
BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **PCH(2/8):PCIE/SMBUS/CLK**

Size: A2 | Document Number: **Kendo-3 WS** | Rev: SA

Date: Tuesday, December 07, 2010 | Sheet 24 of 107



BOM

緯創資通 **Wistron Corporation**

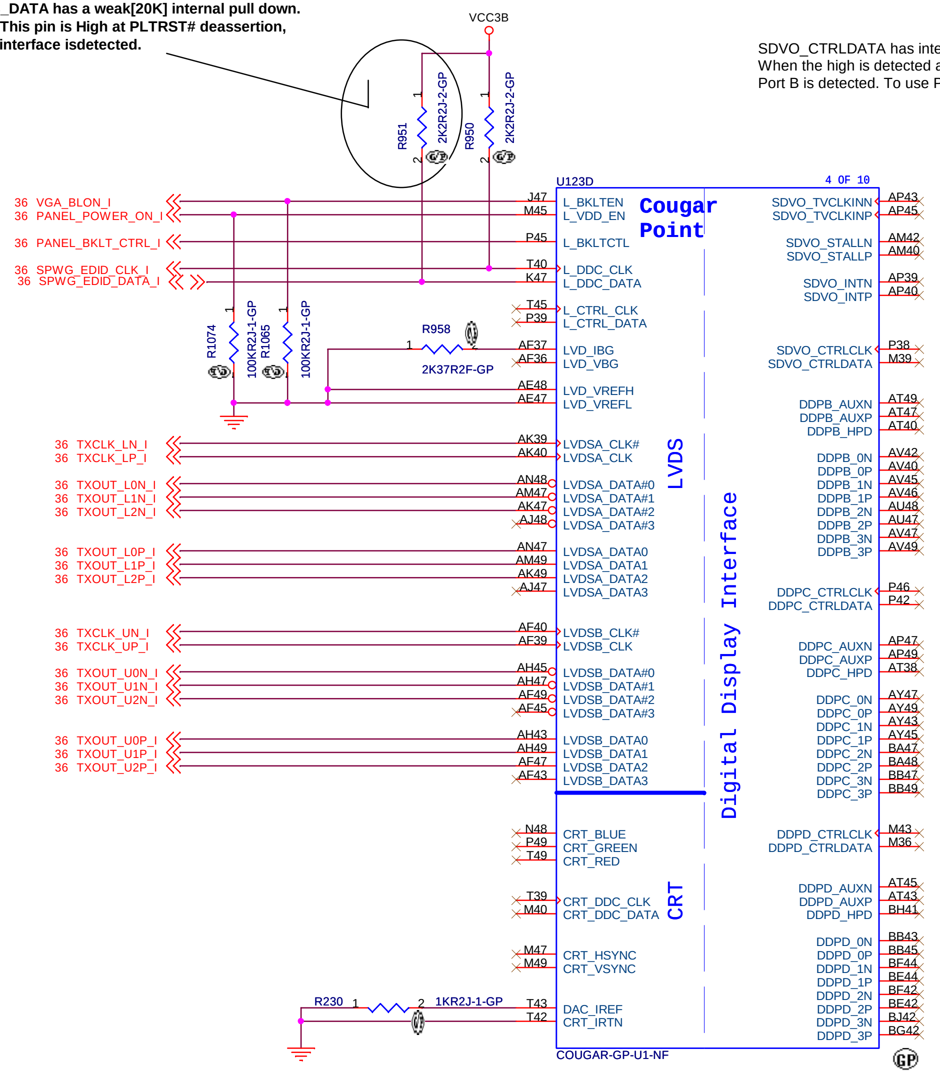
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **PCH (3/8):DMI/FDI/PM**		
Size: Custom	Document Number: **Kendo-3 WS**	Rev: SA
Date: Tuesday, December 07, 2010	Sheet 25 of 107	

L_DDC_DATA has a weak[20K] internal pull down.
When This pin is High at PLTRST# deassertion,
LVDS interface isdetected.

SDVO_CTRLDATA has internal pull down.
When the high is detected at PLTRST# deasserton,
Port B is detected. To use Port B, need to add external pull up.

DDPC_CTRLDATA has internal pull down.
When the high is detected at PLTRST# deasserton,
Port C is detected. To use Port C, need to add external pull up.



DDPD_CTRLDATA has internal pull down.
When the high is detected at PLTRST# deasserton,
Port D is detected. To use Port D, need to add external pull up.

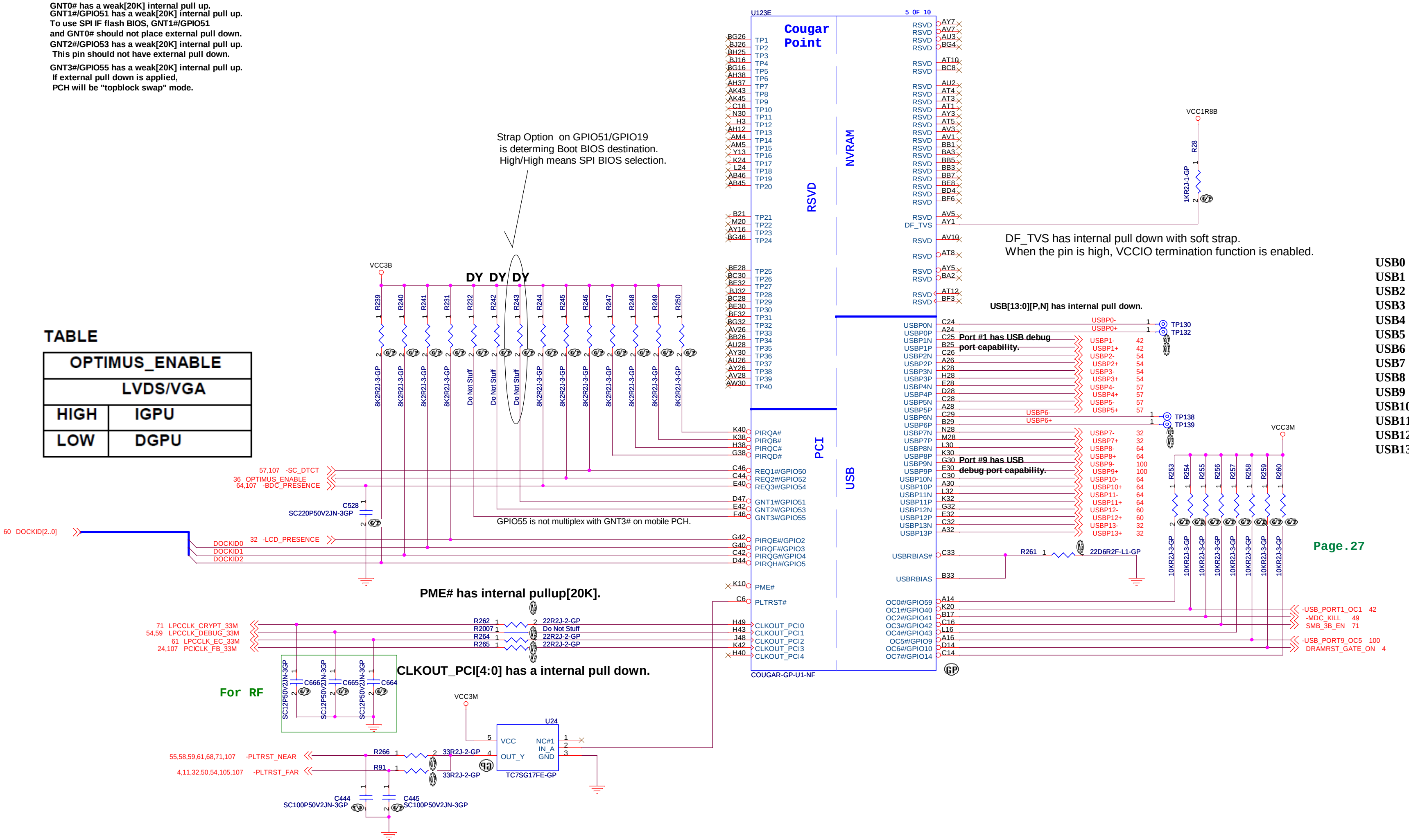
BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	PCH (4/8):LVDS/CRT/DDI		
Size A3	Document Number	Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010		Sheet 26 of 107	

Because PCI IF is not used, ADx.C/BEx and GNTx are left as NC.

GNT0# has a weak[20K] internal pull up.
GNT1#/GPIO51 has a weak[20K] internal pull up.
To use SPI IF flash BIOS, GNT1#/GPIO51
and GNT0# should not place external pull down.
GNT2#/GPIO53 has a weak[20K] internal pull up.
This pin should not have external pull down.
GNT3#/GPIO55 has a weak[20K] internal pull up.
If external pull down is applied,
PCH will be "topblock swap" mode.



TABLE

OPTIMUS_ENABLE	
	LVDS/VGA
HIGH	IGPU
LOW	DGPU

USB0 : To System USB Port (UMA/Dis model)
USB1 : To System onboard USB port(eSATA combo)
USB2 : To WiMAX/WLAN Mini Card Slot
USB3 : To WWAN Mini Card Slot
USB4 : To SmartCard
USB5 : To Express Card Slot
USB6 : Reserved
USB7 : To Touch Panel
USB8 : To Color Sensor
USB9 : To System Subcard USB port
USB10: To FPR
USB11:To Bluetooth
USB12:To Docking
USB13:To Camera

USBP 0	LEFT DUAL CONN	USB_ON1	-USB_PORT0_OC0
USBP 1	LEFT COMBO CONN	USB_ON1	-USB_PORT1_OC1
USBP 8	LEFT DUAL CONN	USB_ON1	-USB_PORT8_OC4
USBP 9	RIGHT SUB CARD	USB_ON2	-USB_PORT9_OC5

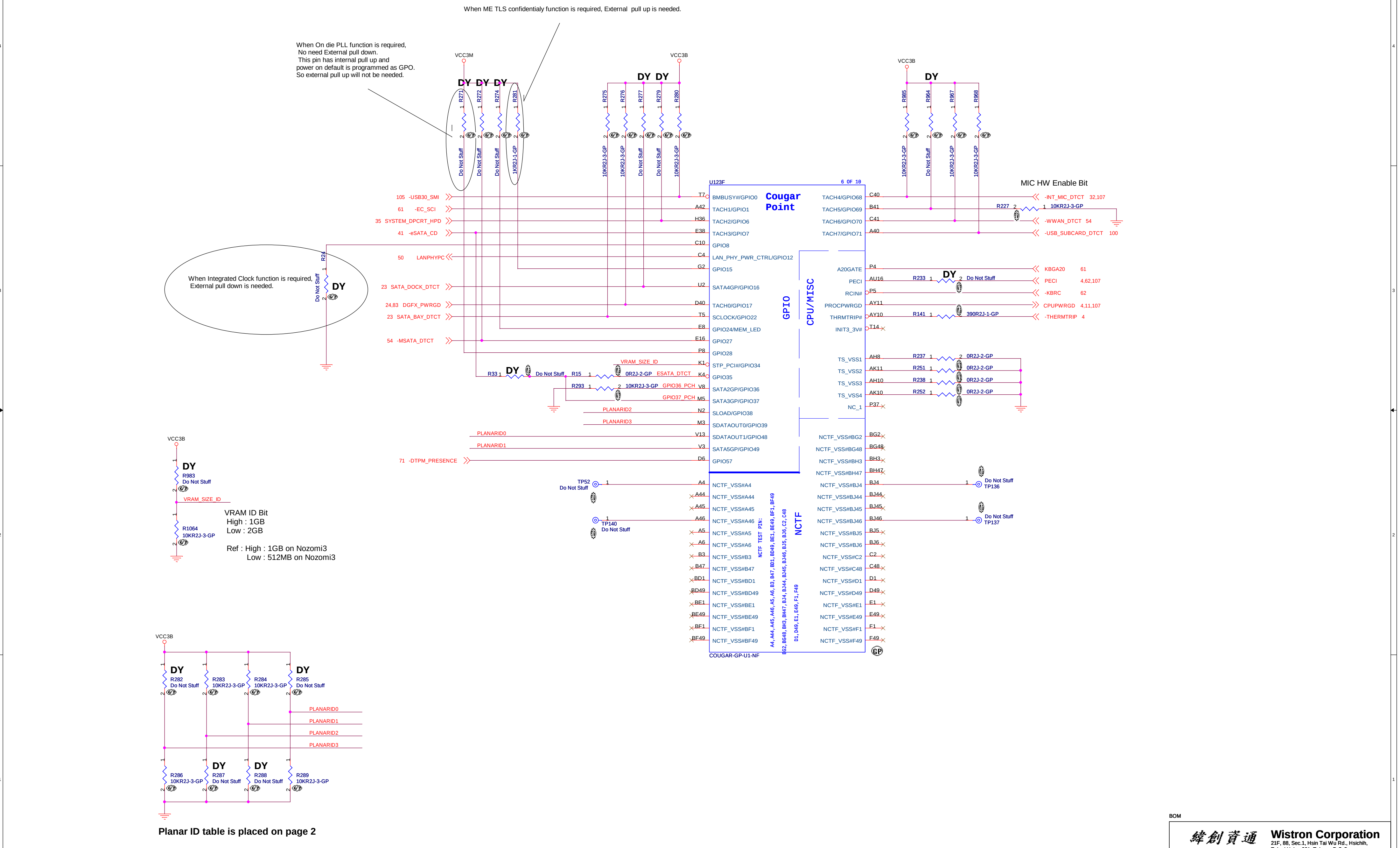
BOM

Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: PCH (5/8):PCI/USB/NVM

Size: A2 | Document Number: Kendo-3 WS | Rev: SA

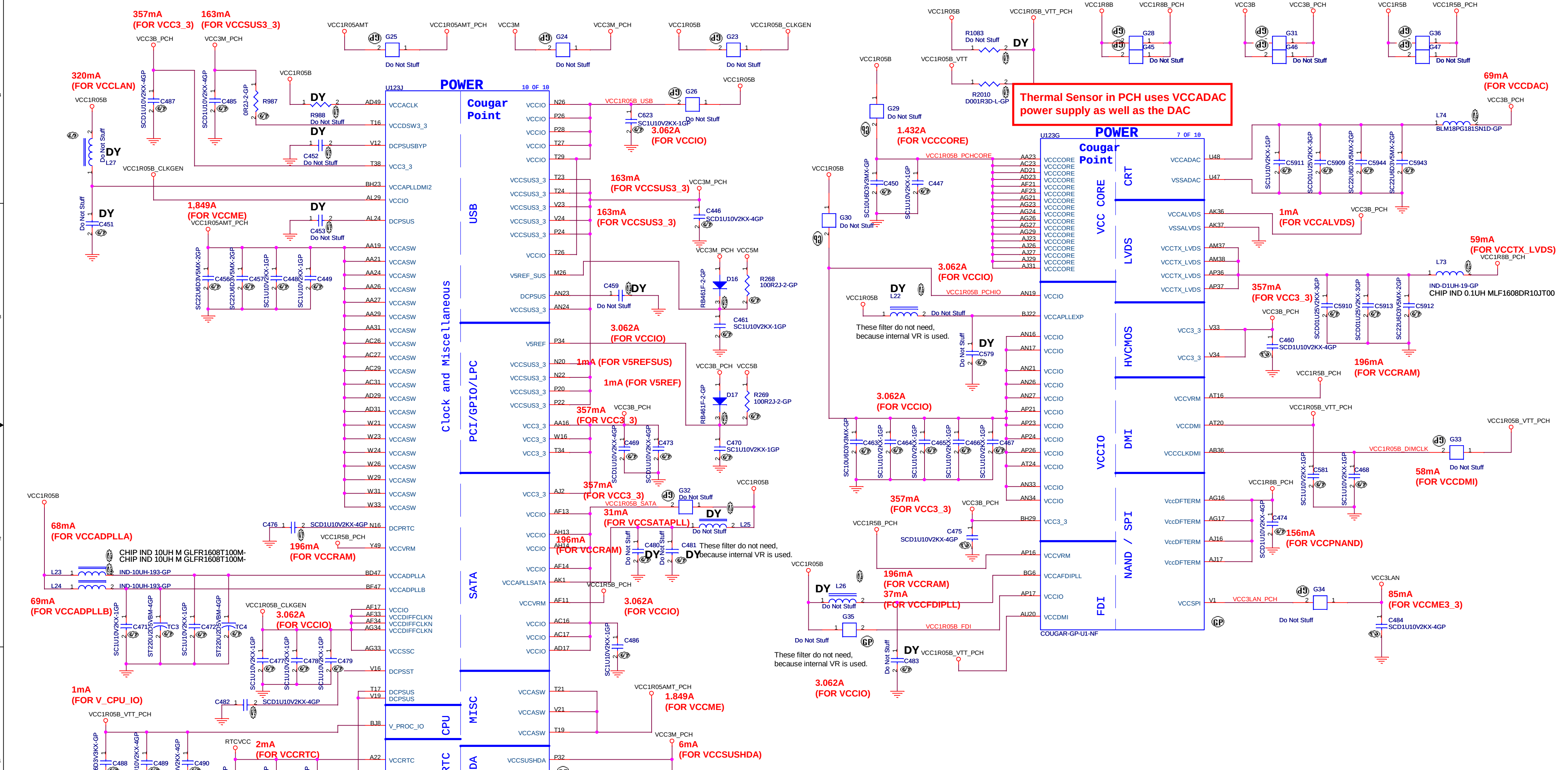
Date: Tuesday, December 07, 2010 | Sheet 27 of 107



BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	PCH (7/8):GPIO/NCTF/RSVD	
Size A2	Document Number: Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 28 of 107	



BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	PCH (6/8): PWR	
Size: Custom	Document Number: Kendo-3 WS	Rev: SA
Date: Tuesday, December 07, 2010	Sheet 29 of 107	

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21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	*BLANK*	
Size A3	Document Number Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 30 of 107	

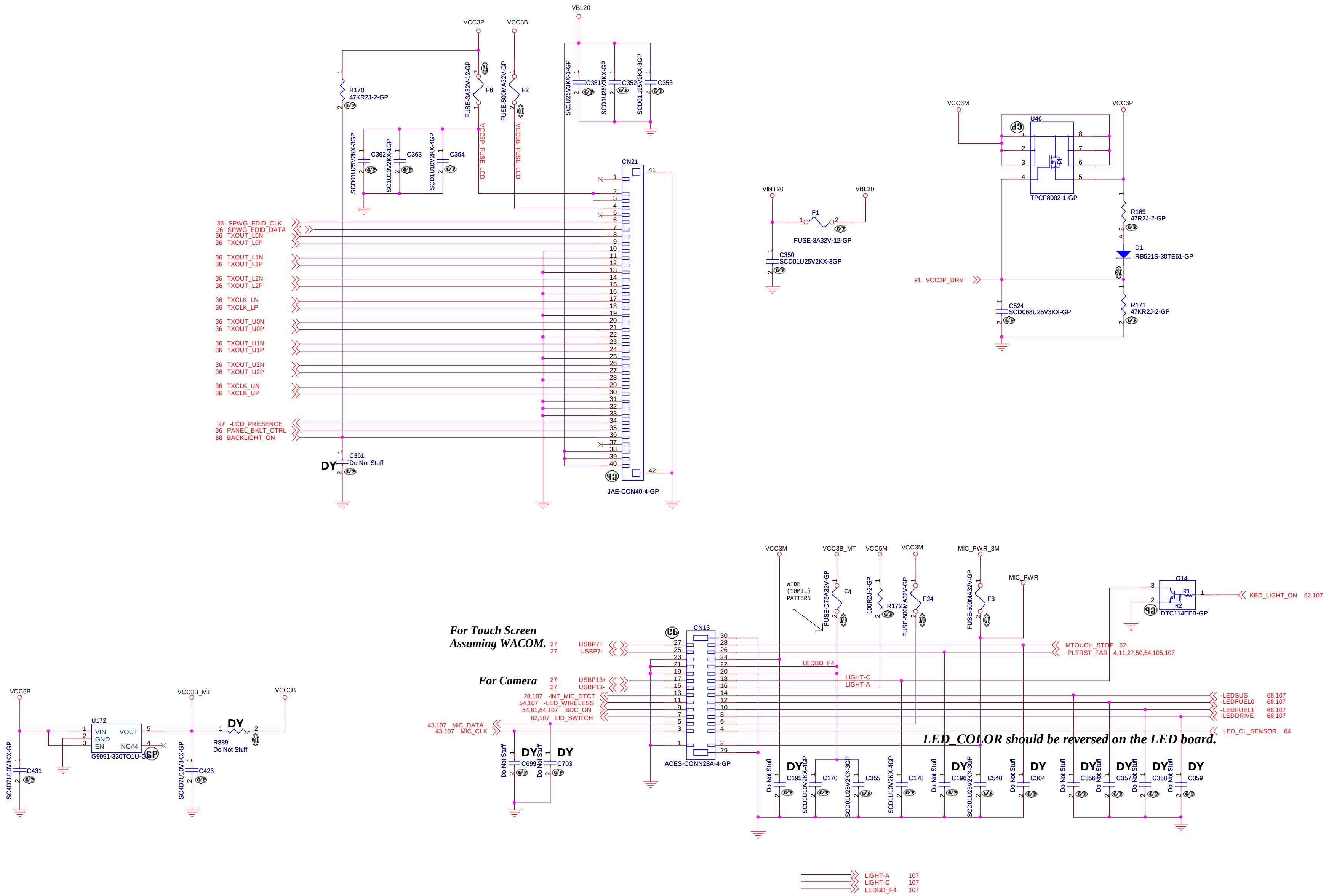


BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title	PCH (8/8):GND		
Size A3	Document Number	Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010		Sheet 31 of 107	

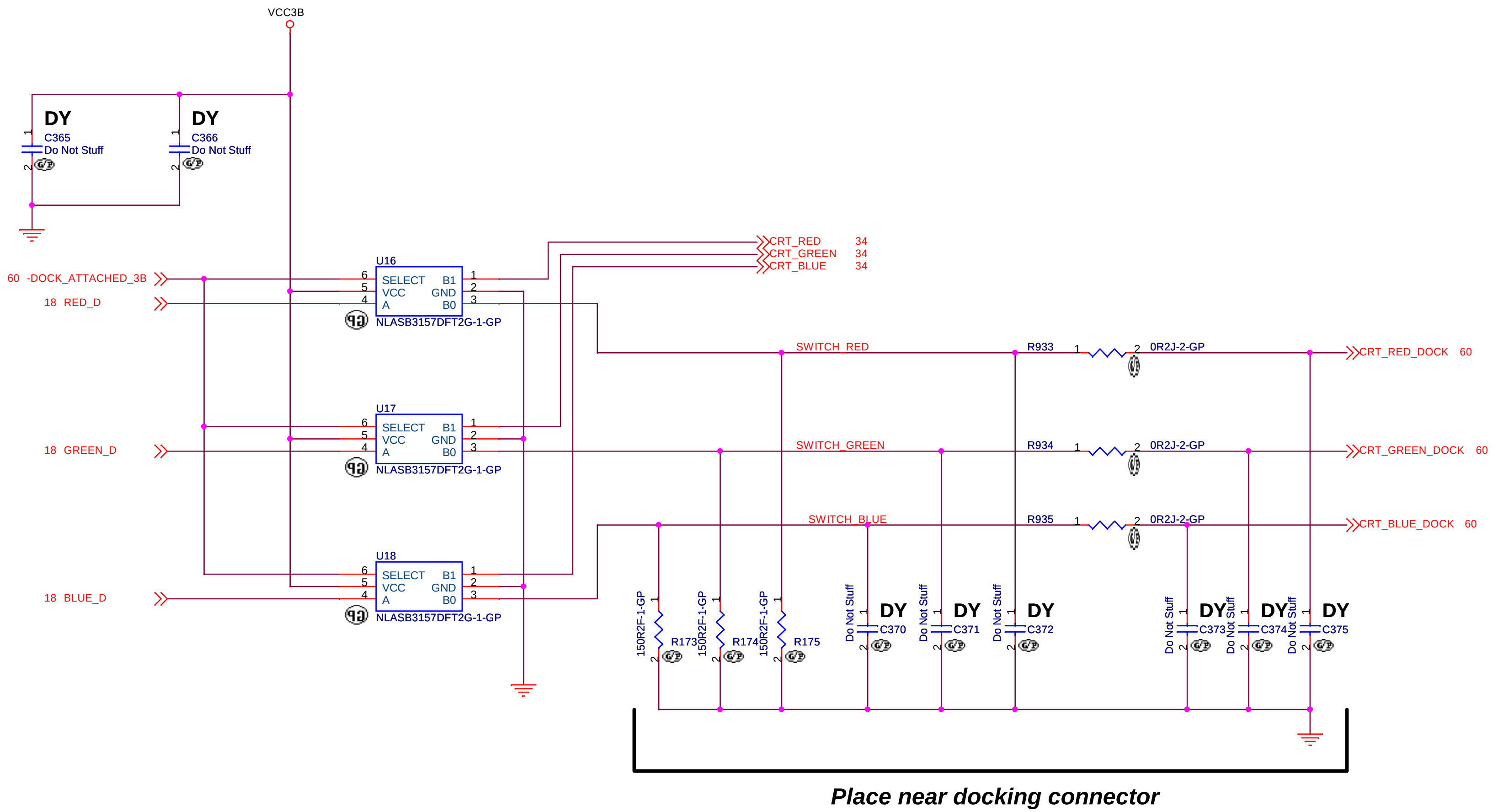
LCD / Inverter Connector



BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	LCD CONNECTOR	
Size A2	Document Number: Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 32 of 107	



	Supplier	Vendo P/N	WISTRON P/N
1	ONSEMI	NLASB3157DFT2G	54Y9028CA
2	Toshiba	TC7SB3157CFU	73.03157.007
3	TI	74LVC1G3157DCKRE4	54Y9028BA

BOM

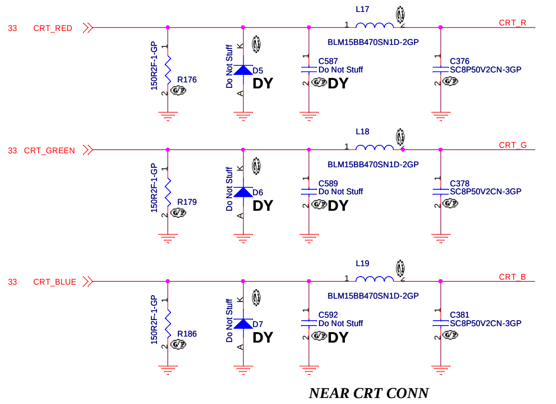
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: ***RGB SWITCH***

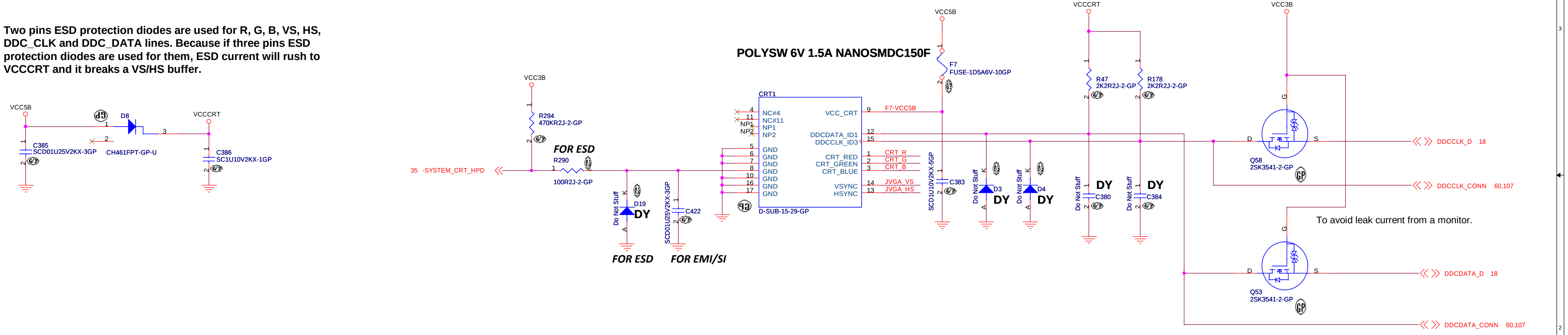
Size: A3 | Document Number: **Kendo-3 WS** | Rev: SA

Date: Tuesday, December 07, 2010 | Sheet 33 of 107

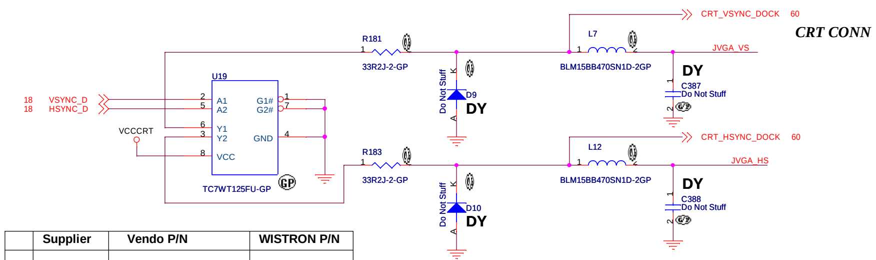
	Supplier	Vendo P/N	WISTRON P/N
1	ROHM	CDZC6.8B	83.00068.0AF
2	TOSHIBA	DF2S6.8UFS	83.00268.0AF



Two pins ESD protection diodes are used for R, G, B, VS, HS, DDC_CLK and DDC_DATA lines. Because if three pins ESD protection diodes are used for them, ESD current will rush to VCCCRT and it breaks a VS/HS buffer.



F7-VCC5B 107

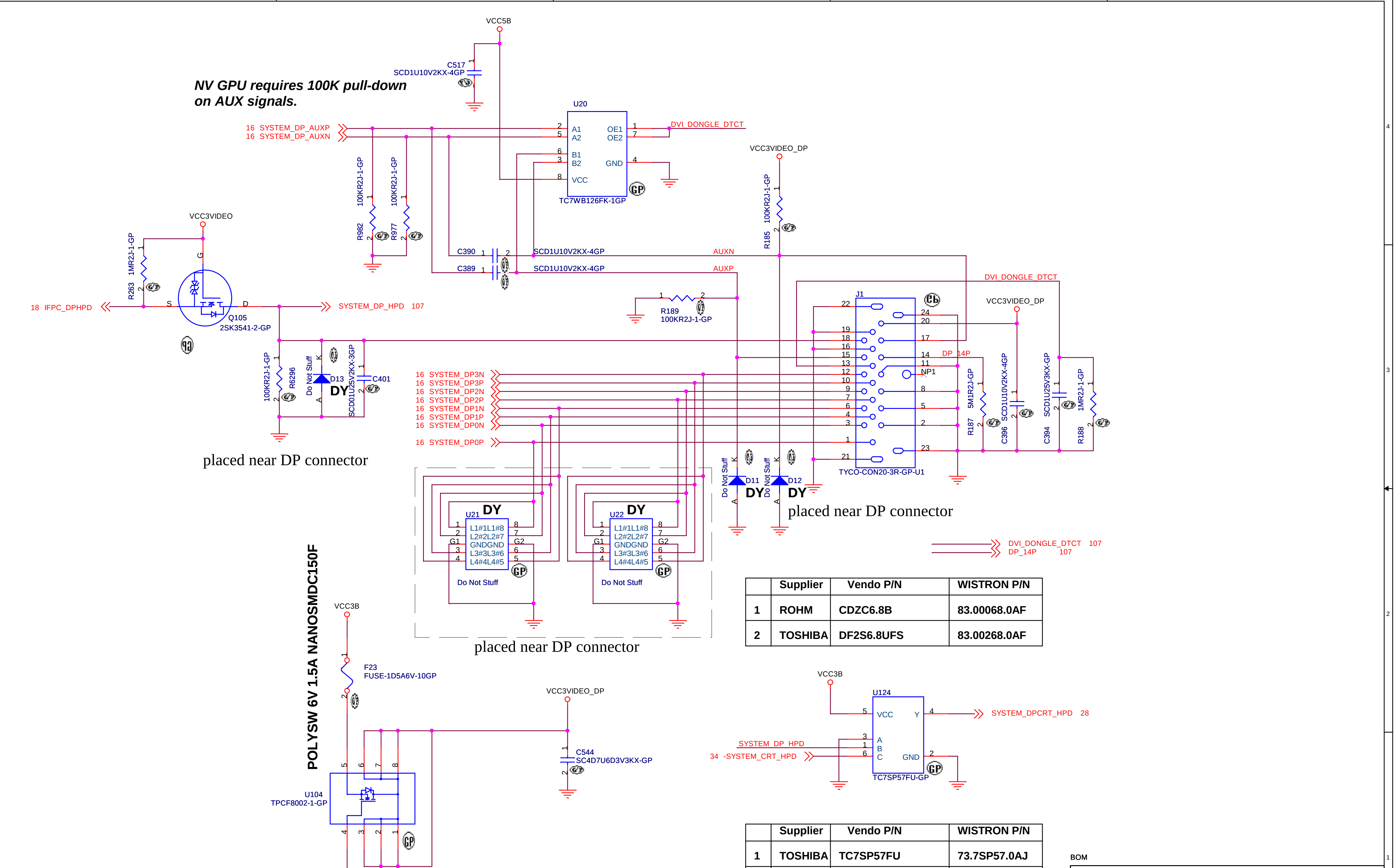


	Supplier	Vendo P/N	WISTRON P/N
1	TOSHIBA	TC7WT125FU-GP	41R0542AA
2	NXP	74HCT2G125DP	73.2G125.A0B

BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title	*EXT CRT INTERFACE*	
Size A2	Document Number: Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 34 of 107	



	Supplier	Vendo P/N	WISTRON P/N
1	ROHM	CDZC6.8B	83.00068.0AF
2	TOSHIBA	DF2S6.8UFS	83.00268.0AF

	Supplier	Vendo P/N	WISTRON P/N
1	TOSHIBA	TC7SP57FU	73.7SP57.0AJ
2	TI	SN74LVC1G57DCKR	73.01G57.AHJ

BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **DISPLAY PORT CONNECTOR**

Size	Document Number	Rev
A3	Kendo-3 WS	SA

Date: Tuesday, December 07, 2010 Sheet 35 of 107

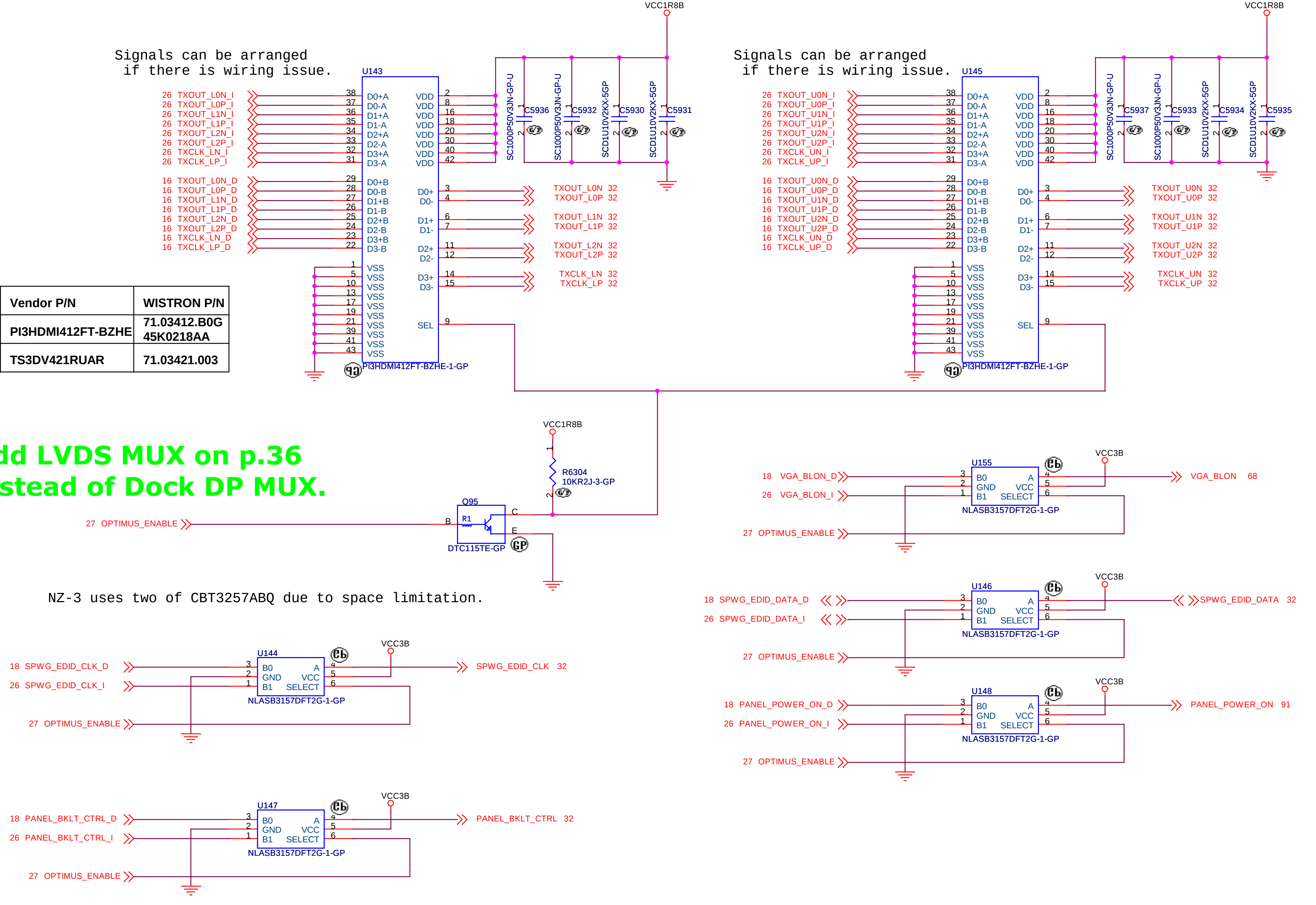
Signals can be arranged if there is wiring issue.

Signals can be arranged if there is wiring issue.

	Supplier	Vendor P/N	WISTRON P/N
1	Pericom	PI3HDMI412FT-BZHE	71.03412.B0G 45K0218AA
2	TI	TS3DV421RUAR	71.03421.003

Add LVDS MUX on p.36 instead of Dock DP MUX.

NZ-3 uses two of CBT3257ABQ due to space limitation.



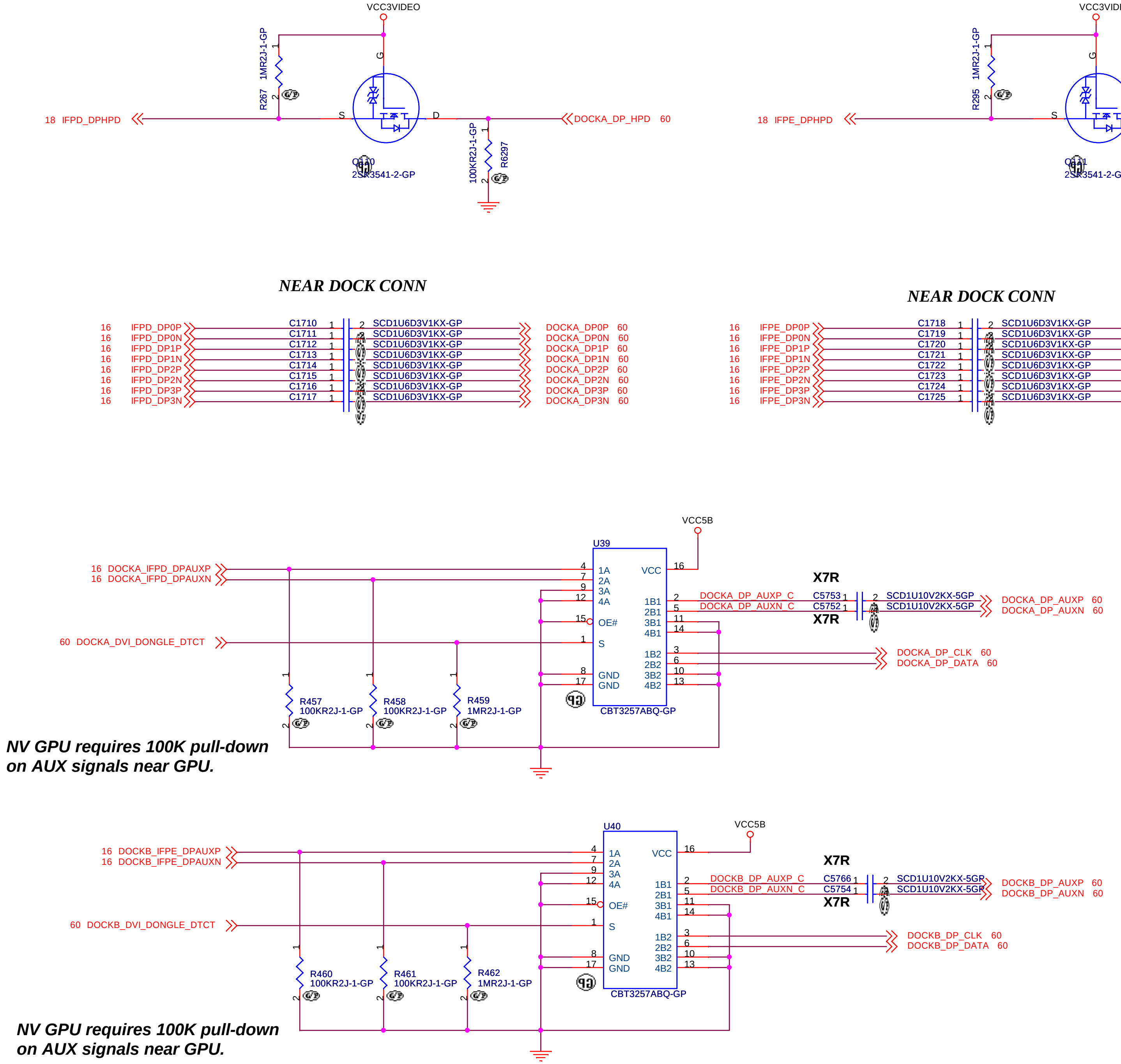
BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **LVDS Switch**

Size	Document Number	Rev
A3	Kendo-3 WS	SA

Date: Tuesday, December 07, 2010 Sheet 36 of 107



		U27, U39. U40	Wistron part number
1	NXP	CBT3257ABQ-GP	45K0213AA
2	OnSemi	74FST3257MNTWG-GP	45K0213BA

INPUTS		INPUT/OUTPUT	FUNCTION
OE#	S	A	
L	L	B1	A port = B1 port
L	H	B2	A port = B2 port
H	X	Z	Disconnect

BOM

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: DISPLAY PORT MUX

Size: A3 | Document Number: Kendo-3 WS | Rev: SA

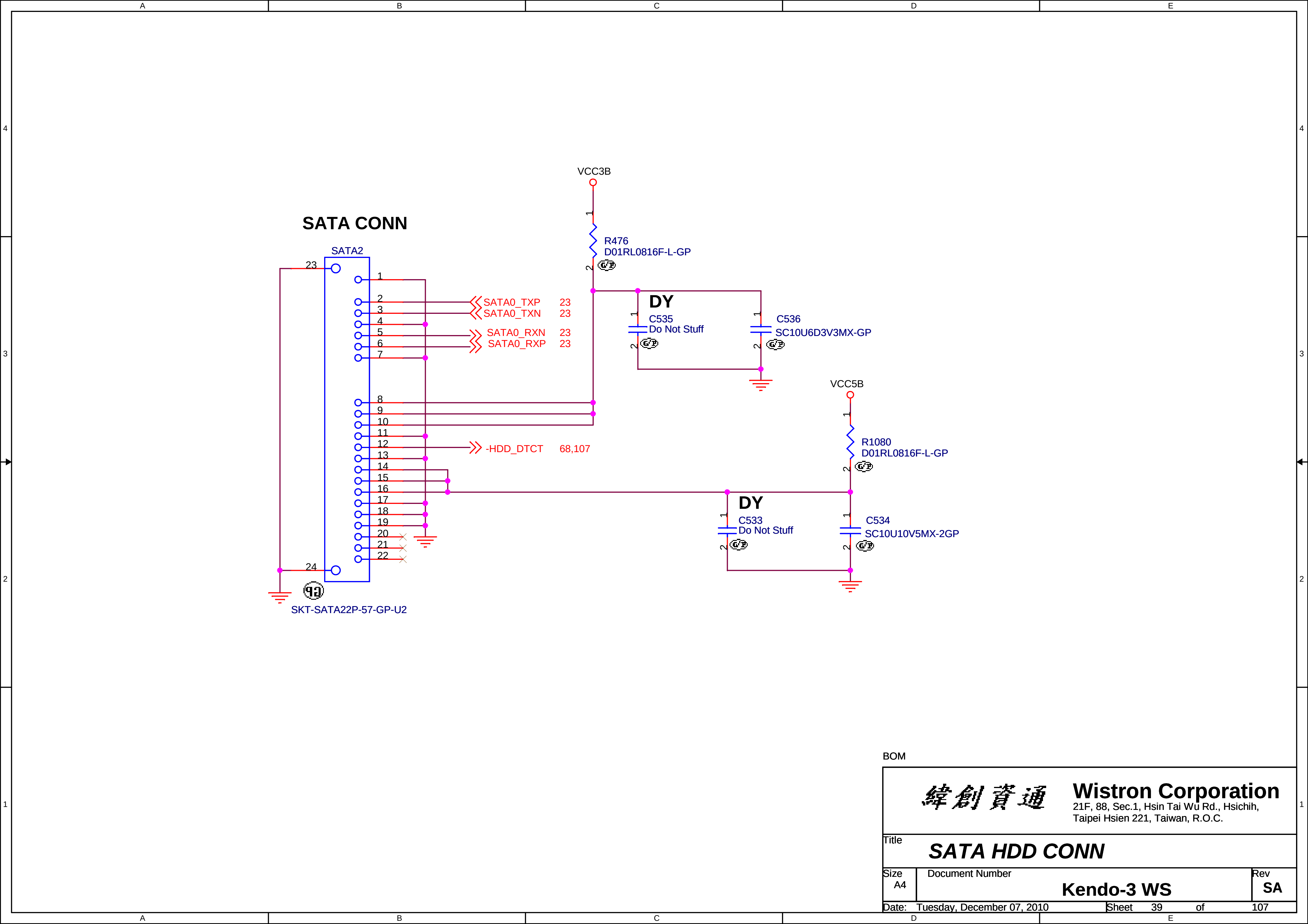
Date: Tuesday, December 07, 2010 | Sheet 37 of 107

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緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	*BLANK*	
Size A3	Document Number Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 38 of 107	



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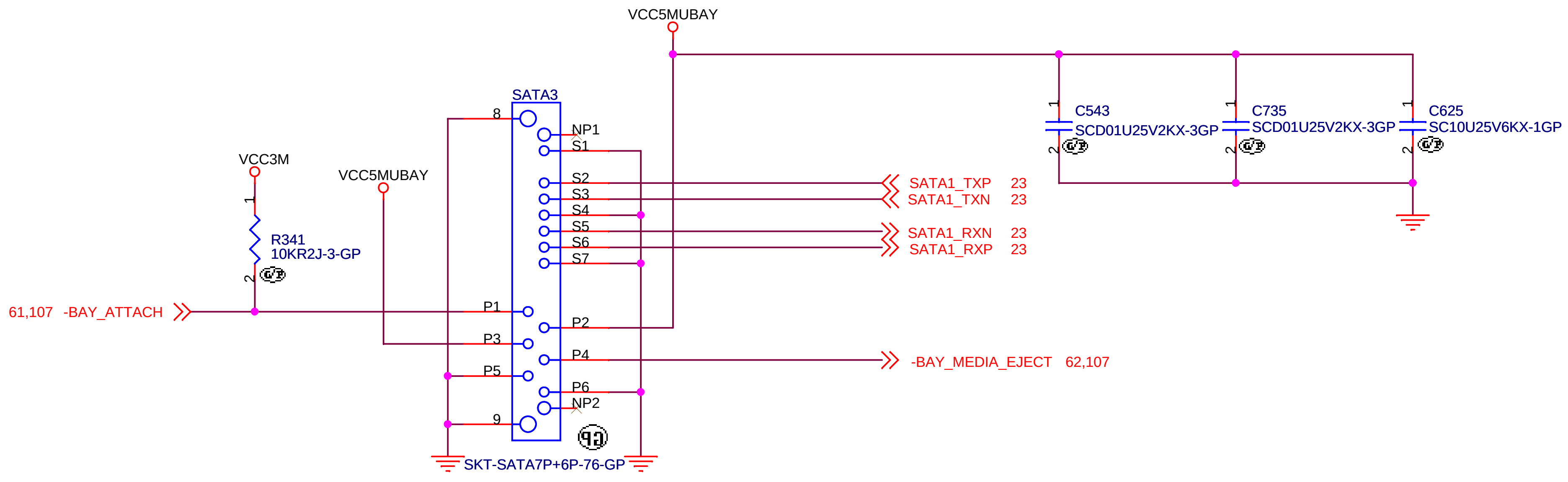
緯創資通 **Wistron Corporation**

21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: ***SATA HDD CONN***

Size: A4 | Document Number: **Kendo-3 WS** | Rev: **SA**

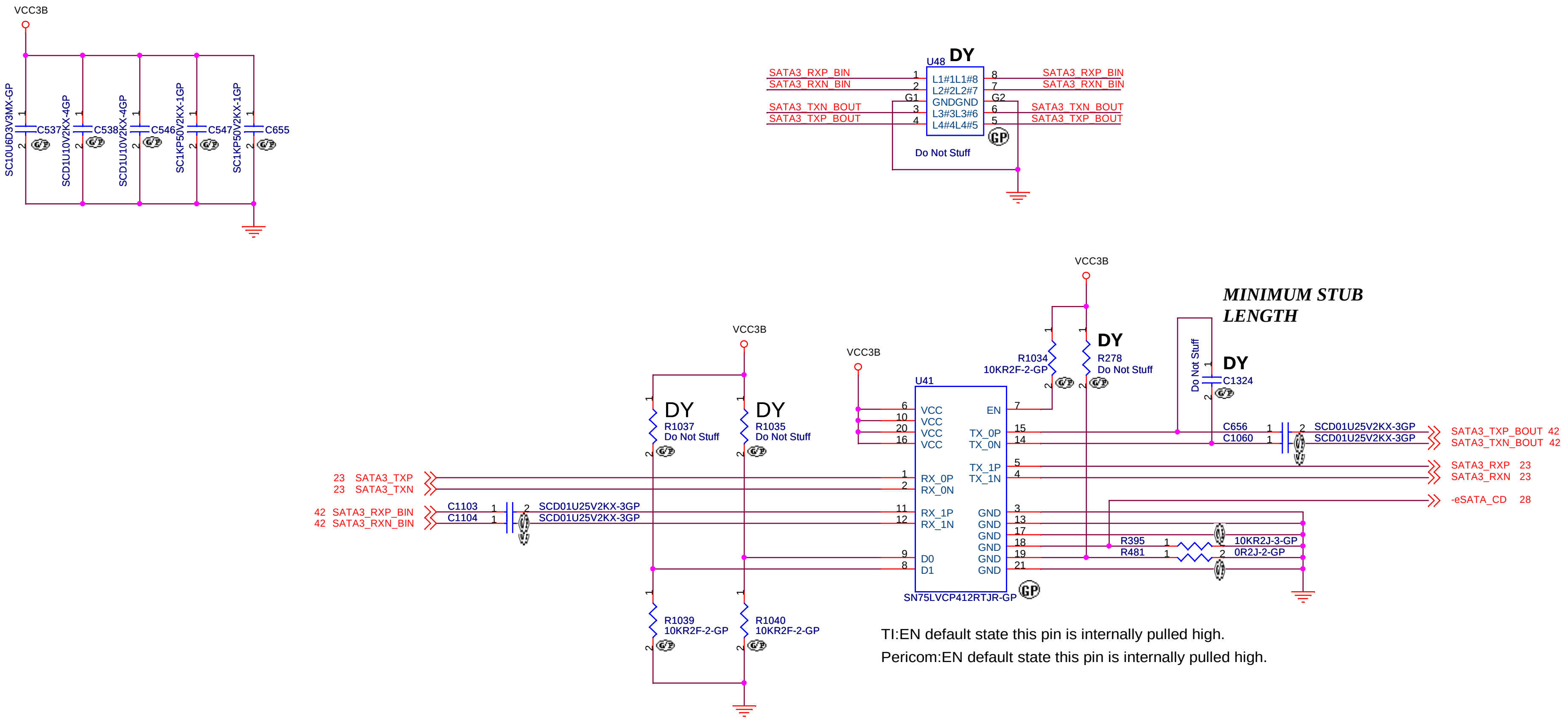
Date: Tuesday, December 07, 2010 | Sheet 39 of 107



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緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	**SATA BAY I/F CONN**	
Size A4	Document Number **Kendo-3 WS**	Rev **SA**
Date: Tuesday, December 07, 2010	Sheet 40 of 107	



TI:EN default state this pin is internally pulled high.
Pericom:EN default state this pin is internally pulled high.

		U41	Part Number	R278	R395	R481
1	TI	SN75LVCP412ARTJR-GP	71.75412.A03	NO ASM	10K	0
2	Pericom	PI3EQX4951STZDEX-GT	71.34951.A03			
3	TI	SN75LVCP412CD	71.75412.B03	4.7K	NO ASM	
2	Pericom	PI3EQX6741STBZDE	71.36741.003			

TABLE

EN	D0	D1	CH - 0	CH - 1
0	X	X	STANDBY	STANDBY
1	0	0	STANDARD	STANDARD
1	1	0	BOOST	STANDARD
1	0	1	STANDARD	BOOST
1	1	1	BOOST	BOOST

← LOGIC

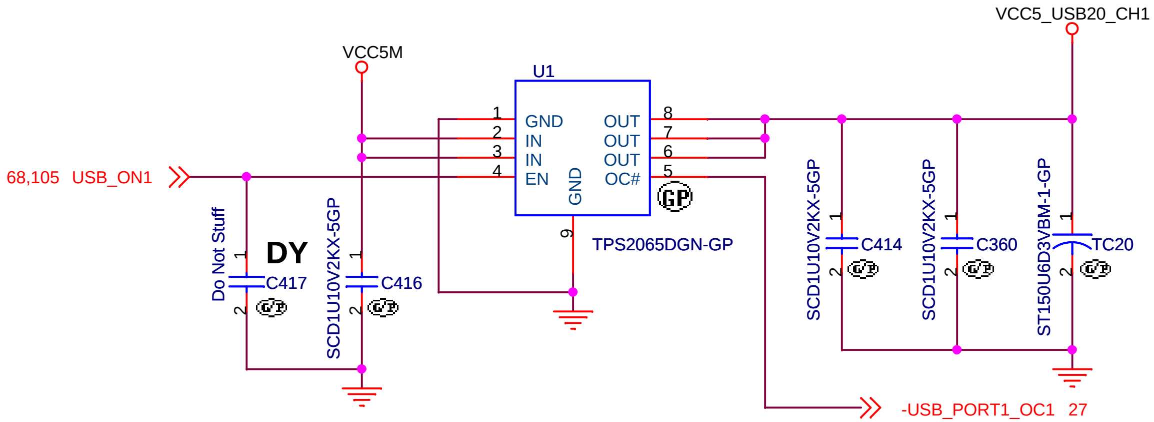
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緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **ESATA CONNECTOR**

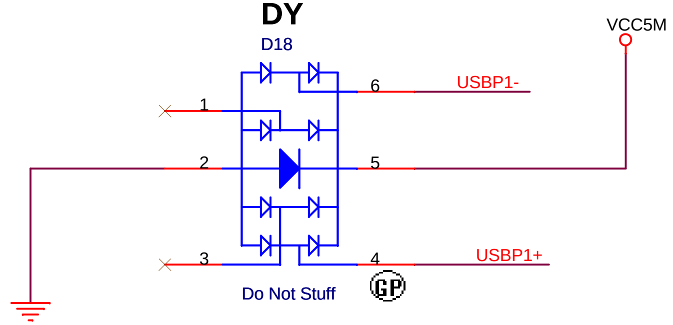
Size: A3 | Document Number: **Kendo-3 WS** | Rev: SA

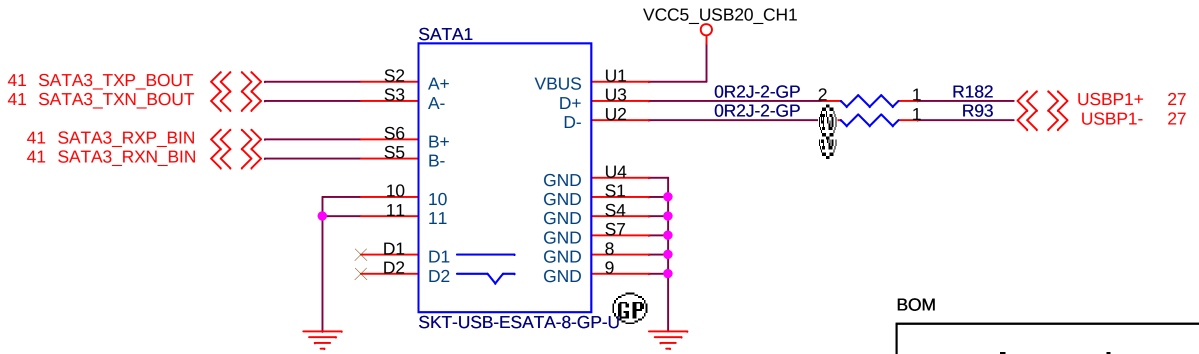
Date: Tuesday, December 07, 2010 | Sheet 41 of 107



1CH USB Power Switch w/o Output Discharge Function

	Supplier	Vendo P/N	WISTRON P/N
U1	TI	TPS2065DGN-GP	54Y9024BA





eSATA Combo

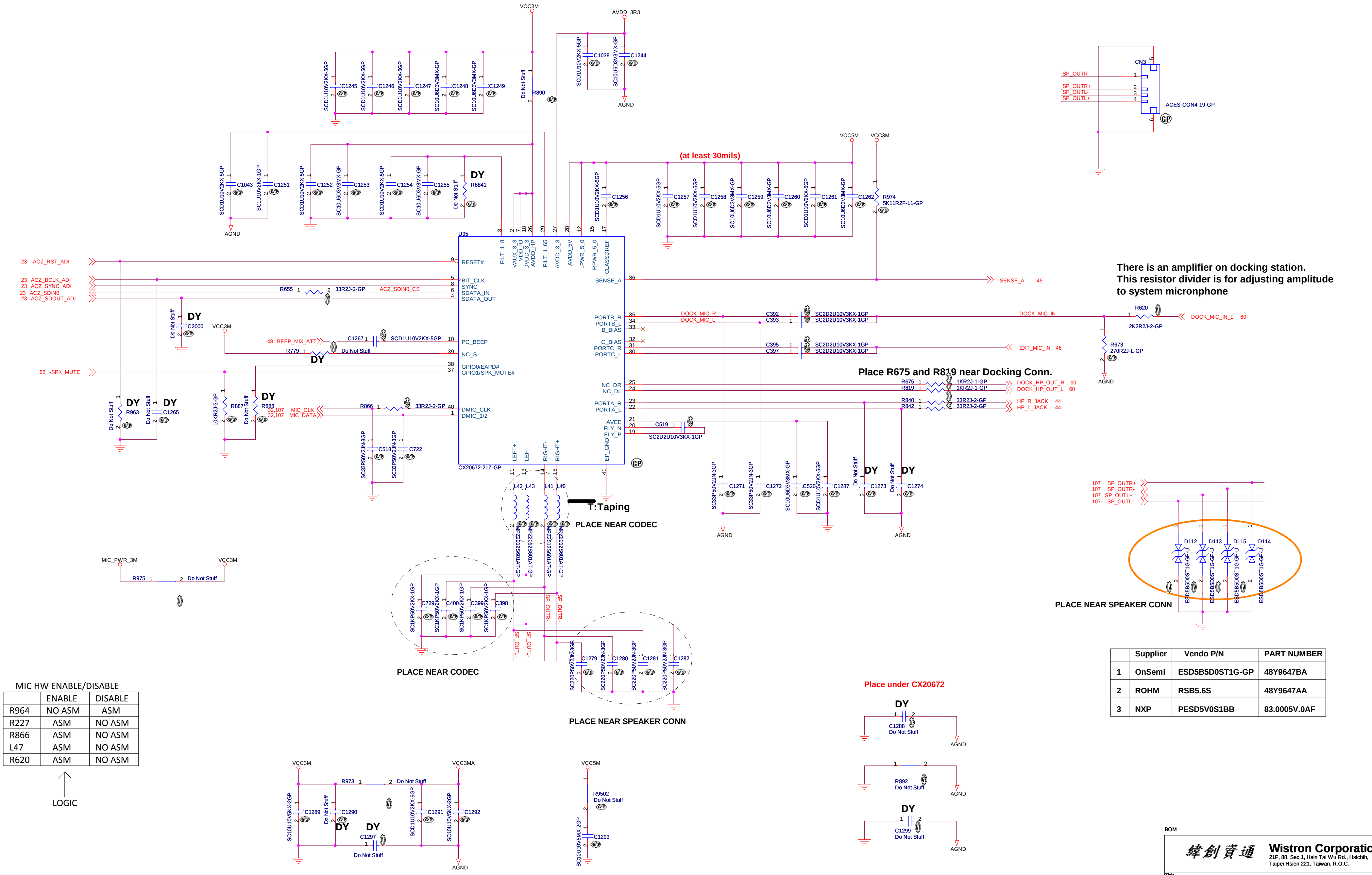
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緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: ***USB POWER/ CONN***

Size: A4 | Document Number: **Kendo-3 WS** | Rev: **SA**

Date: Tuesday, December 07, 2010 | Sheet 42 of 107



MIC HW ENABLE/DISABLE

	ENABLE	DISABLE
R964	NO ASM	ASM
R227	ASM	NO ASM
R866	ASM	NO ASM
L47	ASM	NO ASM
R620	ASM	NO ASM

LOGIC

	Supplier	Vendo P/N	PART NUMBER
1	OnSemi	ESD5B5D0ST1G-GP	48Y9647BA
2	ROHM	RSB5.6S	48Y9647AA
3	NXP	PESD5V0S1BB	83.0005V.0AF

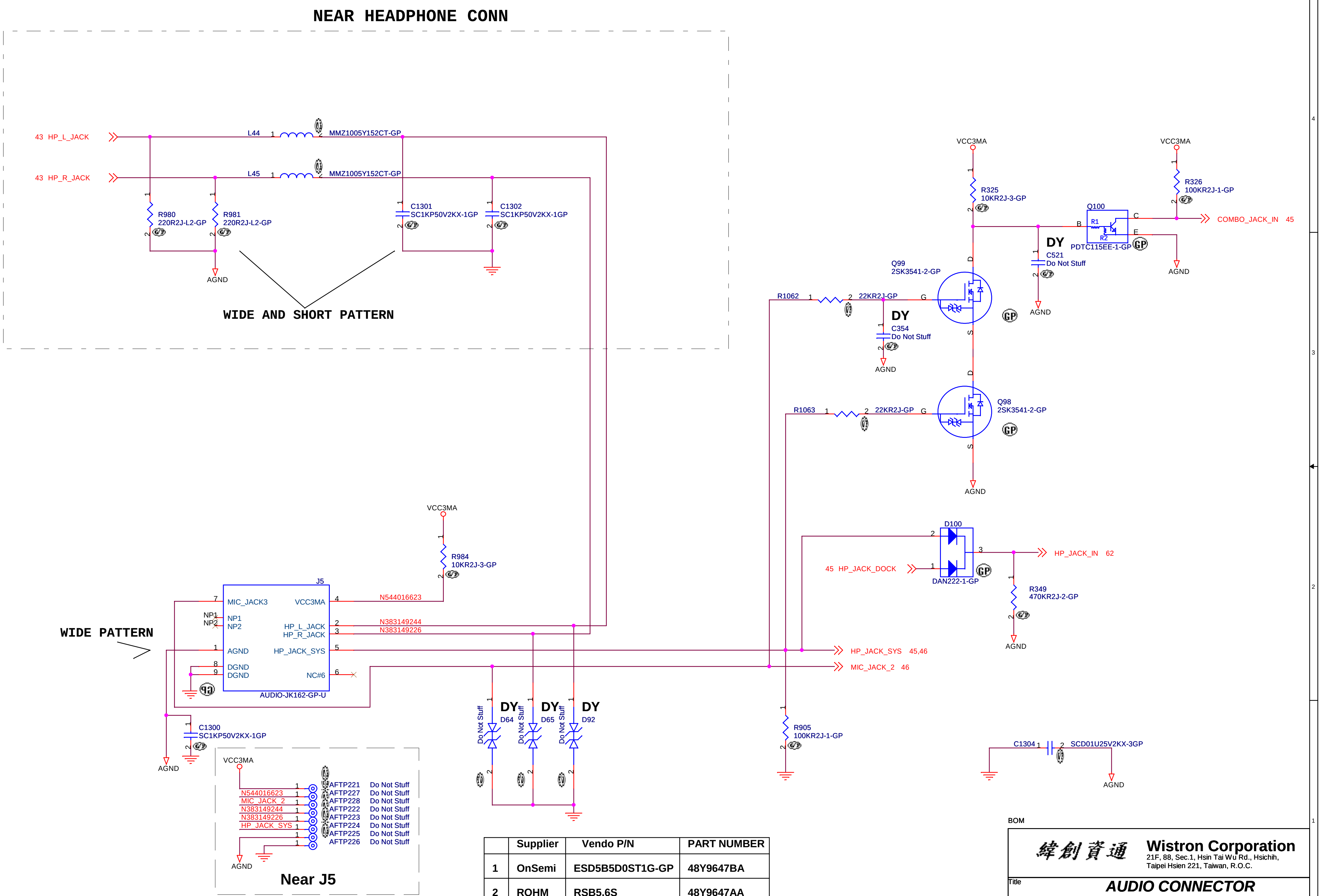
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緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **AUDIO CX20672**

Size: A2 | Document Number: **Kendo-3 WS** | Rev: SA

Date: Tuesday, December 07, 2010 | Sheet 43 of 107



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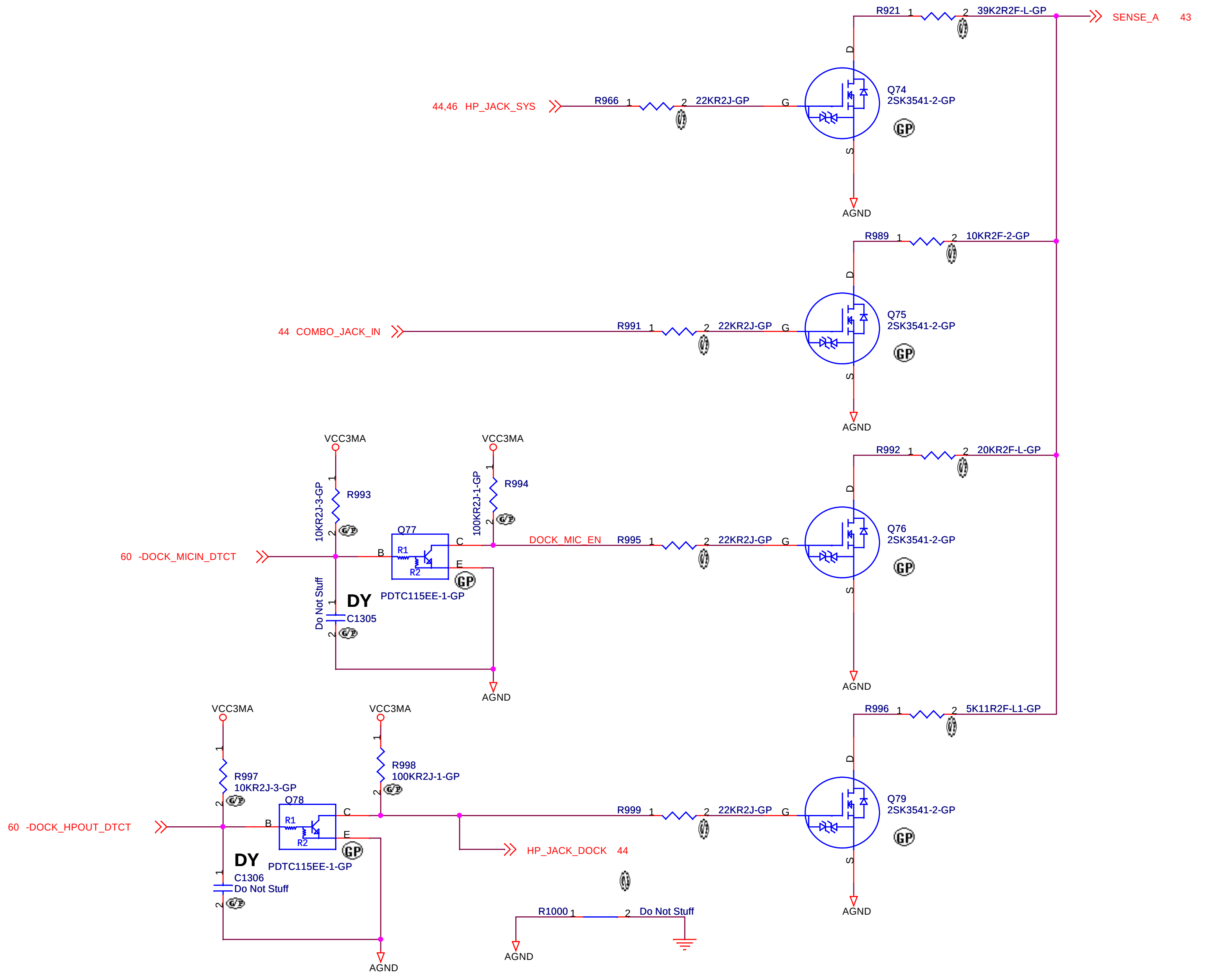
	Supplier	Vendo P/N	PART NUMBER
1	OnSemi	ESD5B5D0ST1G-GP	48Y9647BA
2	ROHM	RSB5.6S	48Y9647AA
3	NXP	PESD5V0S1BB	83.0005V.0AF

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **AUDIO CONNECTOR**

Size	Document Number	Rev
A3	Kendo-3 WS	SA

Date: Tuesday, December 07, 2010 Sheet 44 of 107



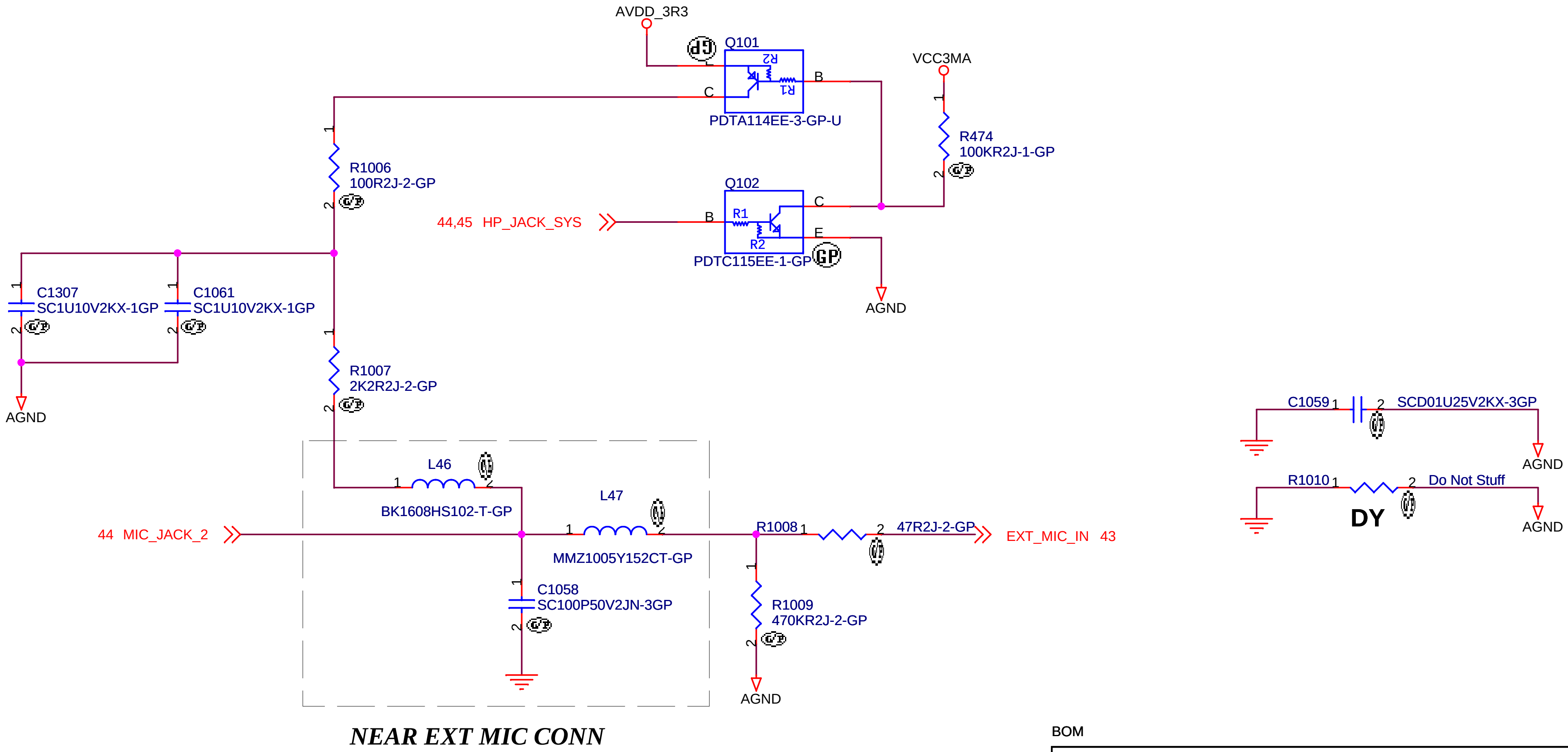
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緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title
AUDIO JACK SENSE

Size	Document Number	Rev
A3	Kendo-3 WS	SA

Date: Tuesday, December 07, 2010 Sheet 45 of 107



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緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

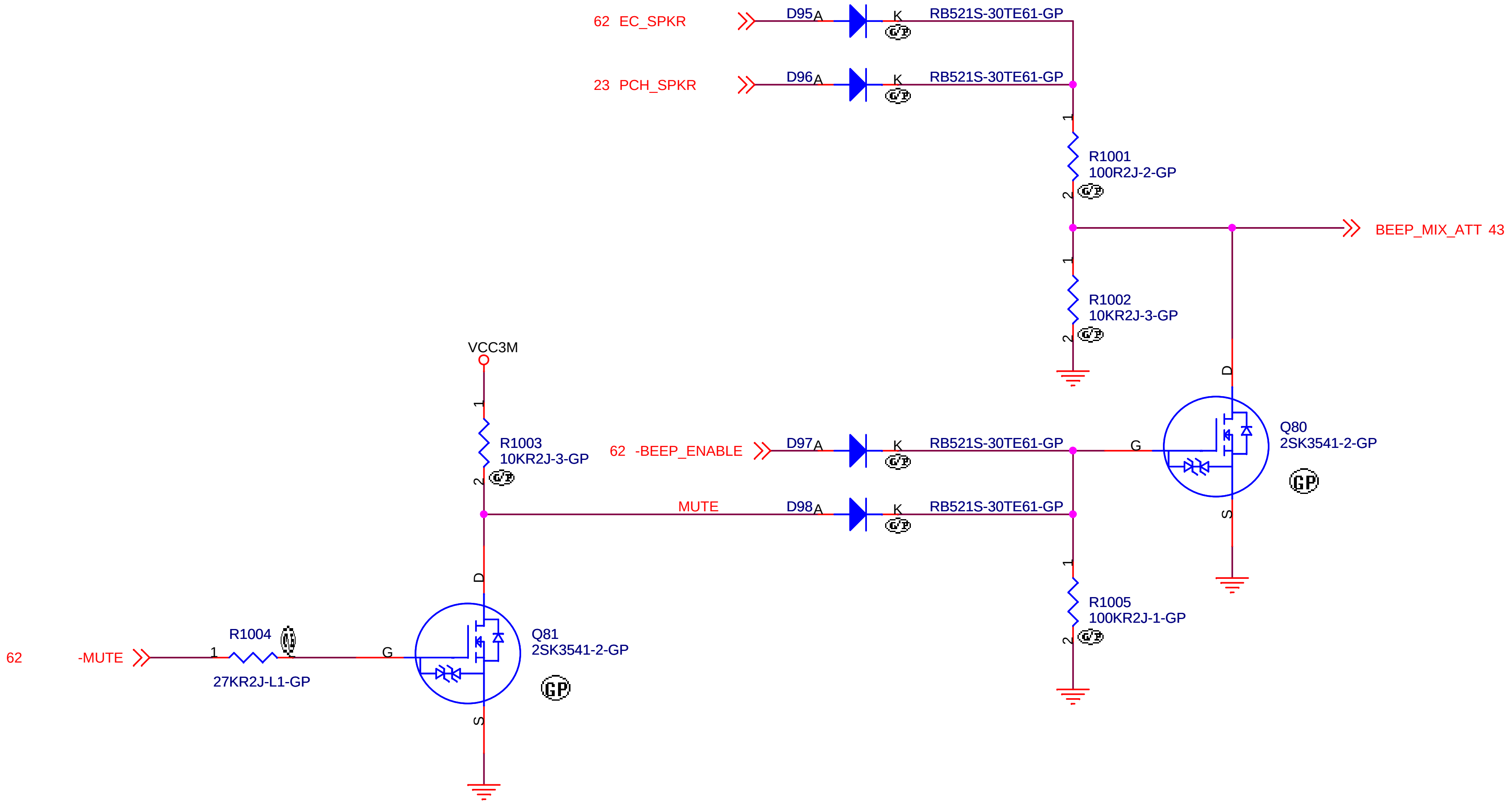
Title	**AUDIO EXT MIC I/F**	
Size A4	Document Number **Kendo-3 WS**	Rev **SA**
Date: Tuesday, December 07, 2010	Sheet 46 of 107	

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緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

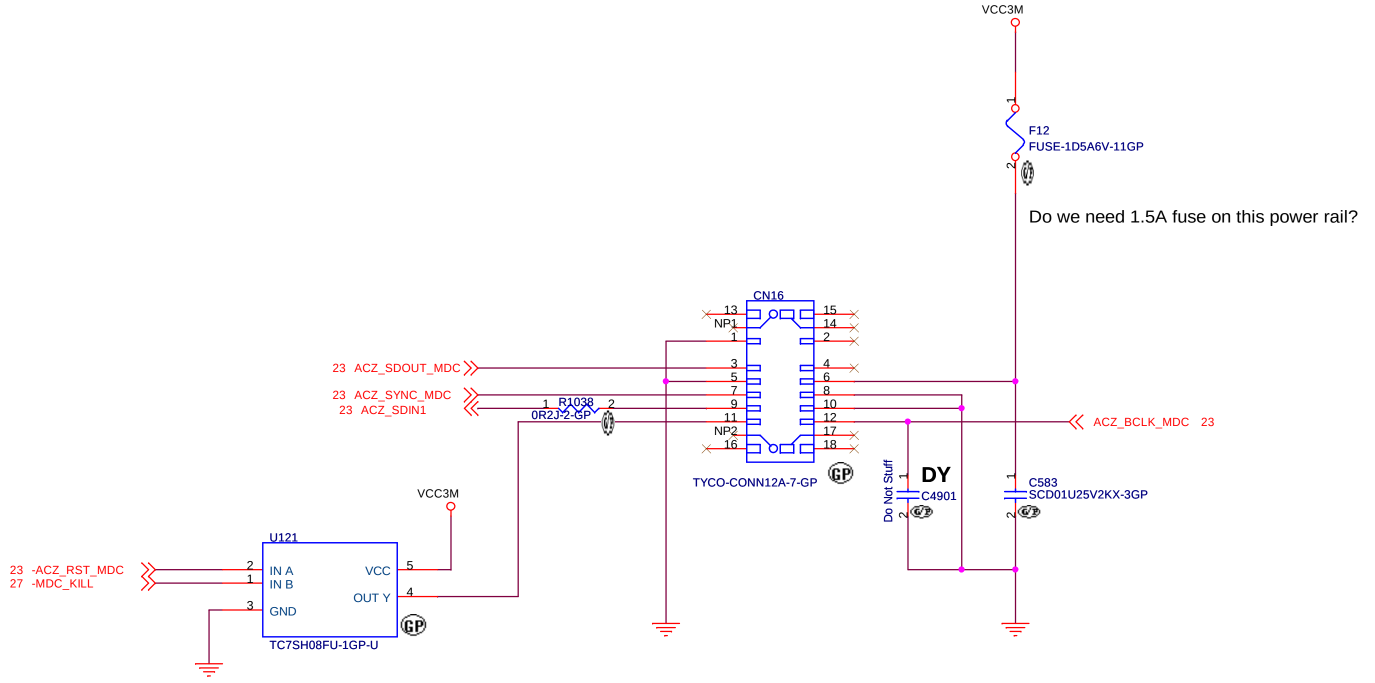
Title	***BLANK***	
Size A3	Document Number **Kendo-3 WS**	Rev **SA**
Date: Tuesday, December 07, 2010	Sheet 47 of 107	



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緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

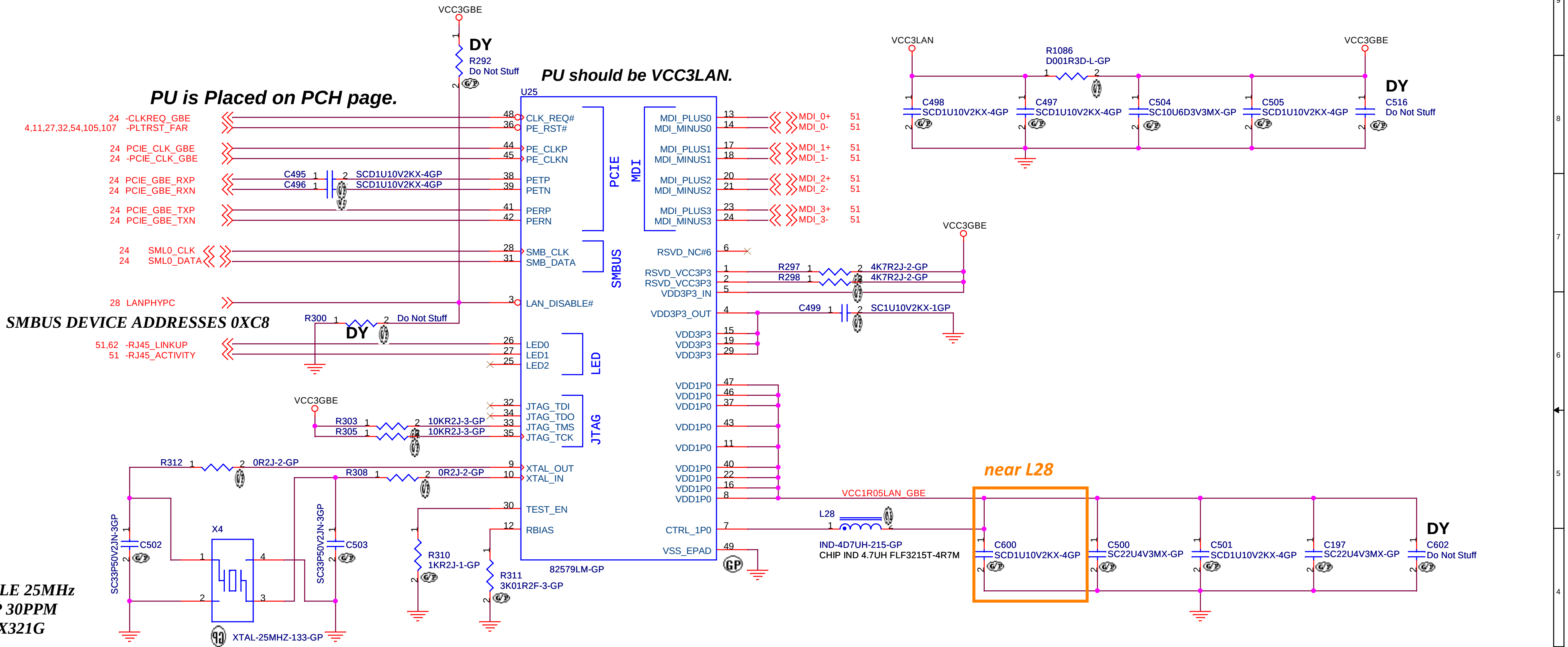
Title	***BEEP CONTROL***	
Size A4	Document Number **Kendo-3 WS**	Rev **SA**
Date: Tuesday, December 07, 2010	Sheet 48 of 107	



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緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	*MDC Interface*	
Size A3	Document Number Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 49 of 107	



	Supplier	Vendo P/N	WISTRON P/N
1	HARMONY	XTAL 25M 18P30PPM HSX321G SMD	82.30020.B21
2	HOSONIC	XATL 25M 18P30PPM HCX-3SB SMD	82.30020.B41
3	TXC	XTAL 25M 18P30PPM 4P SMD	82.30020.D21

NOTE: VCC1R05LAN WILL WORK AT 0.95V TO 1.15V

HARMONY, TXC : C502, C503=22pF

KDS Recommended Conditions:
Normal Frequency: 25MHz.
Frequency Tolerance: +/- 30ppm.
Load Frequency: 18pF.
Effective Series Resistance: 50-ohm.
Effective Shunt Capacitancce: 2pF.

HELE Recommended Conditions:
Normal Frequency: 25MHz.
Frequency Tolerance: +/- 30ppm.
Load Frequency: 18pF.
Effective Series Resistance: 50-ohm.
Effective Shunt Capacitancce: 2pF.

Intel Recommended Conditions:
Normal Frequency: 25MHz.
Frequency Tolerance: +/- 30ppm.
Load Frequency: 18pF.
Effective Series Resistance: 50-ohm.
Effective Shunt Capacitancce: 6pF.

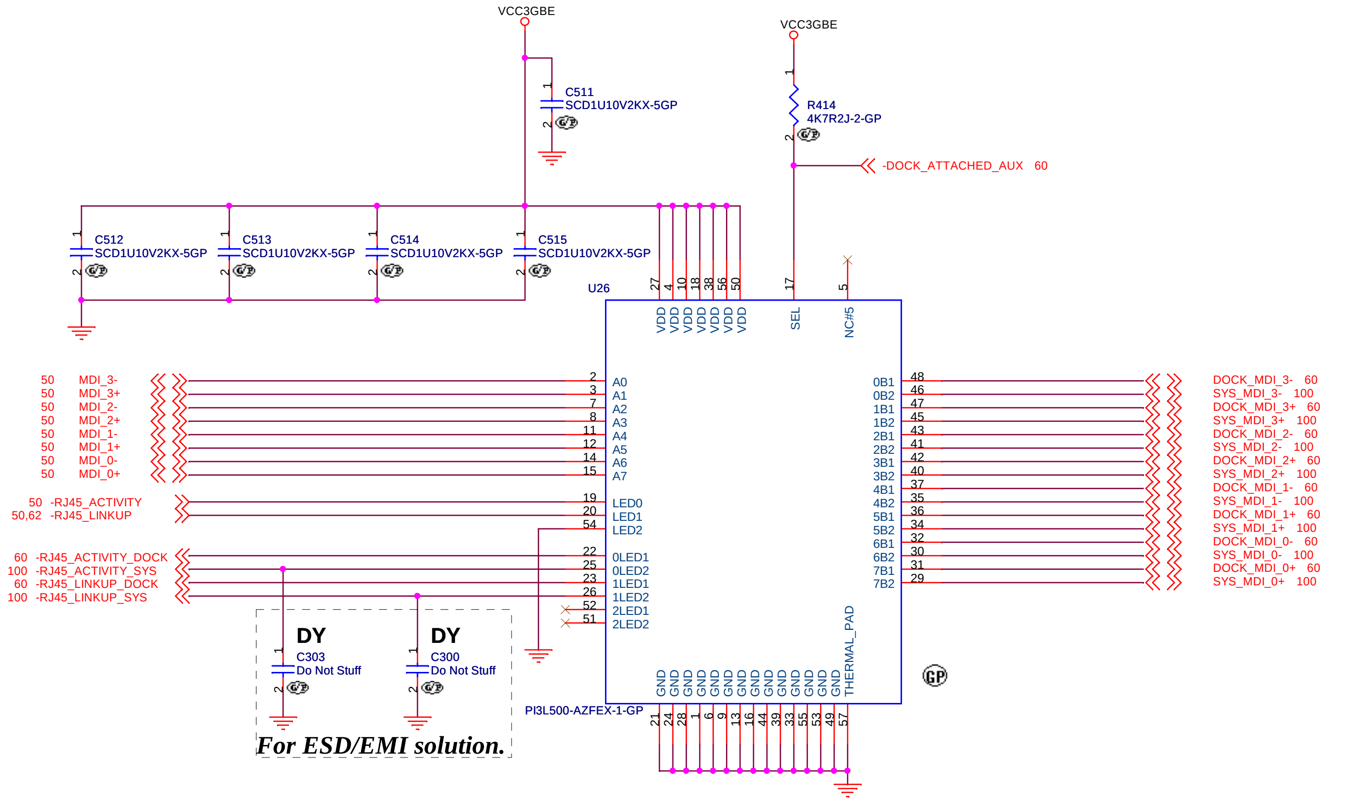
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緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: GBE HANKSVILLE

Size: A3 | Document Number: Kendo-3 WS | Rev: SA

Date: Tuesday, December 07, 2010



[Source Cadidate]				
1st	Pericom	PI3L500AZFEX	73.3L500.003	41R0539AA
2nd	TI	TS3L500AERHUR	73.3L500.A0V	41R0539BA
3rd	ONSEMI	NS3L500MTTWG	73.03500.003	

BOM

緯創資通 Wistron Corporation
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Taipei Hsien 221, Taiwan, R.O.C.

Title: **GBE LAN SW**

Size: A3 | Document Number: Kendo-3 WS | Rev: SA

Date: Tuesday, December 07, 2010

BLANK

BOM

緯創資通 **Wistron Corporation**
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Taipei Hsien 221, Taiwan, R.O.C.

Title: **BLANK**		
Size: A4	Document Number: **Kendo-3 WS**	Rev: **SA**
Date: Tuesday, December 07, 2010	Sheet 52 of 107	

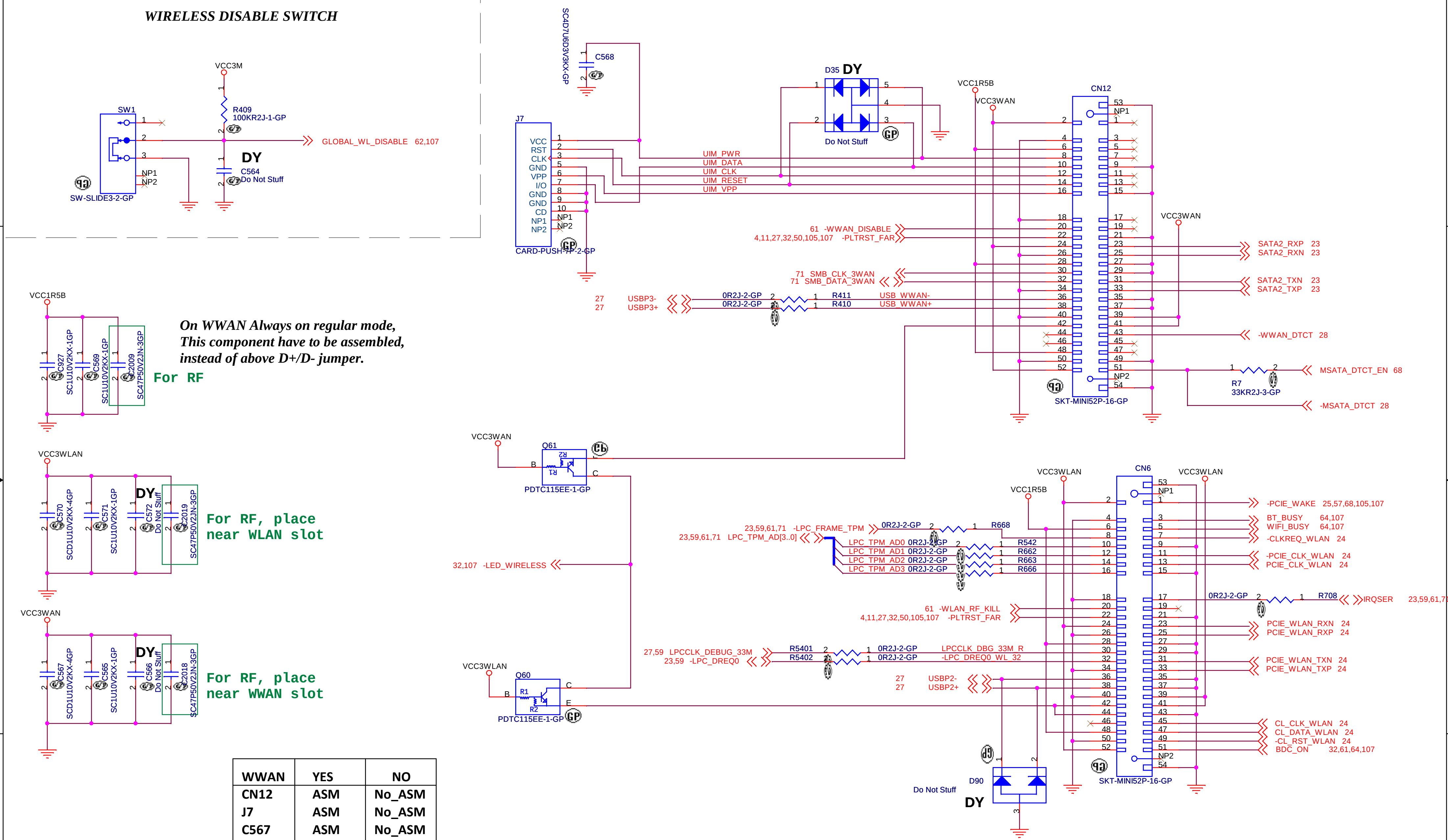
BLANK

BOM

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	BLANK	
Size: A4	Document Number: Kendo-3 WS	Rev: SA
Date: Tuesday, December 07, 2010	Sheet 53 of 107	

When PCIe IF device does not use, These signal will be removed.



WWAN	YES	NO
CN12	ASM	No_ASM
J7	ASM	No_ASM
C567	ASM	No_ASM
C565	ASM	No_ASM
C568	ASM	No_ASM
C2018	ASM	No_ASM

↑

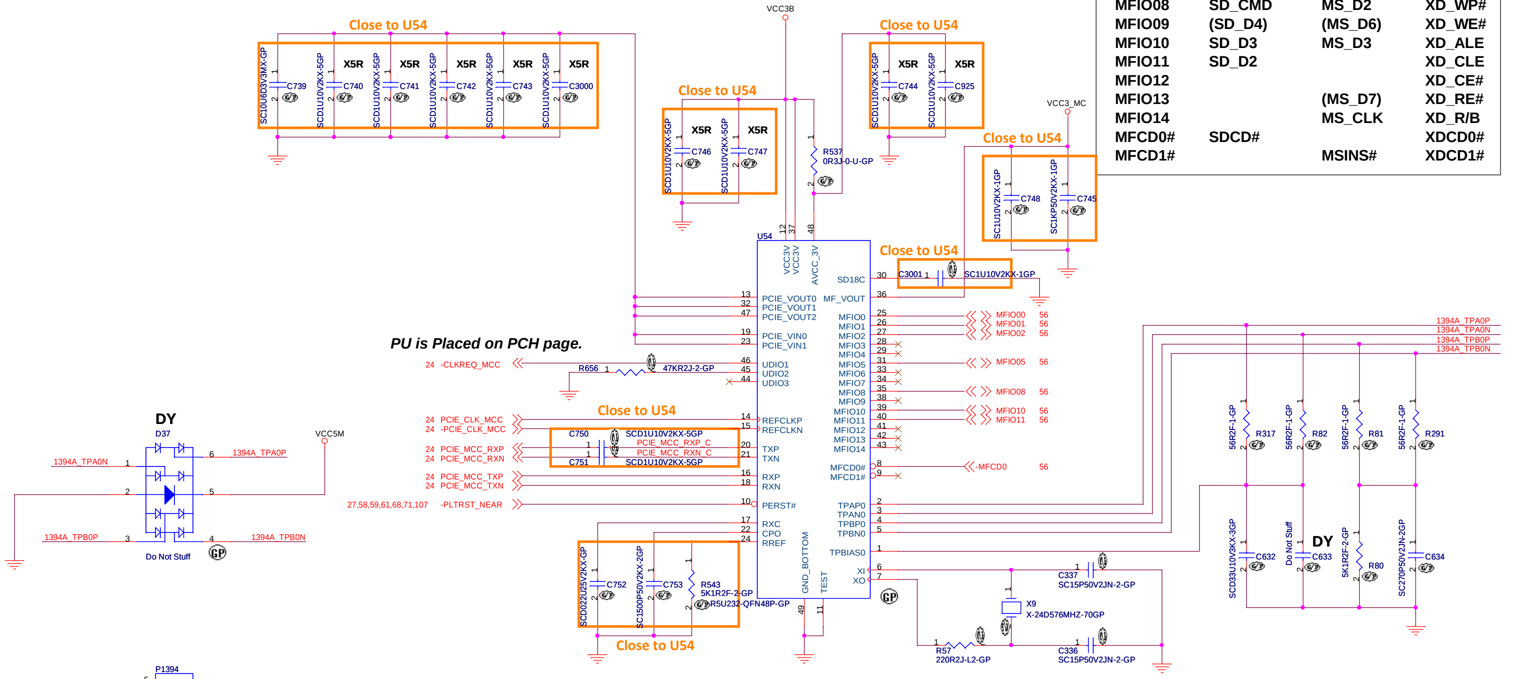
Logic

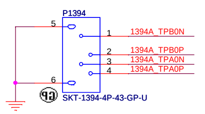
BOM

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Taipei Hsien 221, Taiwan, R.O.C.

Title	PCIE MINI CARD SLOT	
Size: A3	Document Number: Kendo-3 WS	Rev: SA
Date: Tuesday, December 07, 2010	Sheet 54 of 107	

MEDIA I/F	SD/MMC	MEMORYSTICK	XD
MFIO00	SDWP#	MSBS	XD_D7
MFIO01	SD_D1		XD_D6
MFIO02	SD_D0	MS_D1	XD_D5
MFIO03	(SD_D7)		XD_D4
MFIO04	(SD_D6)	(MS_D5)	XD_D3
MFIO05	SD_CLK	MS_D0	XD_D2
MFIO06			XD_D1
MFIO07	(SD_D5)	(MS_D4)	XD_D0
MFIO08	SD_CMD	MS_D2	XD_WP#
MFIO09	(SD_D4)	(MS_D6)	XD_WE#
MFIO10	SD_D3	MS_D3	XD_ALE
MFIO11	SD_D2		XD_CLE
MFIO12			XD_CE#
MFIO13		(MS_D7)	XD_RE#
MFIO14		MS_CLK	XD_R/B
MFCD0#	SDCD#		XDCD0#
MFCD1#		MSINS#	XDCD1#





KDS 24.576MHz
12P 50PPM
HCX-6F

UDIO Pin Assignment Table

UDIO	Default
01	CLKREQ#
02	SCL/SROM_EN
03	SDA

MFCDxN Detection Table

MFCDxN		Card Type
1	0	
H	H	(No Card)
H	L	SD Card/MMC
L	H	MemoryStick
L	L	XD Card

Richo Recommended Conditions:
Normal Frequency: 24.576MHz
Frequency Tolerance: +/- 50ppm.
Load Capacitance: 10pF.
Effective Series Resistance: 50-ohm.
Effective Shunt Capacitance: 7pF.

KDS Recommended Conditions:
Normal Frequency: 24.576MHz
Frequency Tolerance: +/- 30ppm.
Load Capacitance: 12pF+/-0.2.
Effective Series Resistance: 50-ohm.
Effective Shunt Capactiance: 7pF.

	Supplier	Vendo P/N	WISTRON P/N
1	HARMONY	XTAL 24.576M 12P30PPM HSX530G SMD	82.30023.611
2			
3	TXC	XTAL 24.576M 12P30PPM SMD	82.30023.651

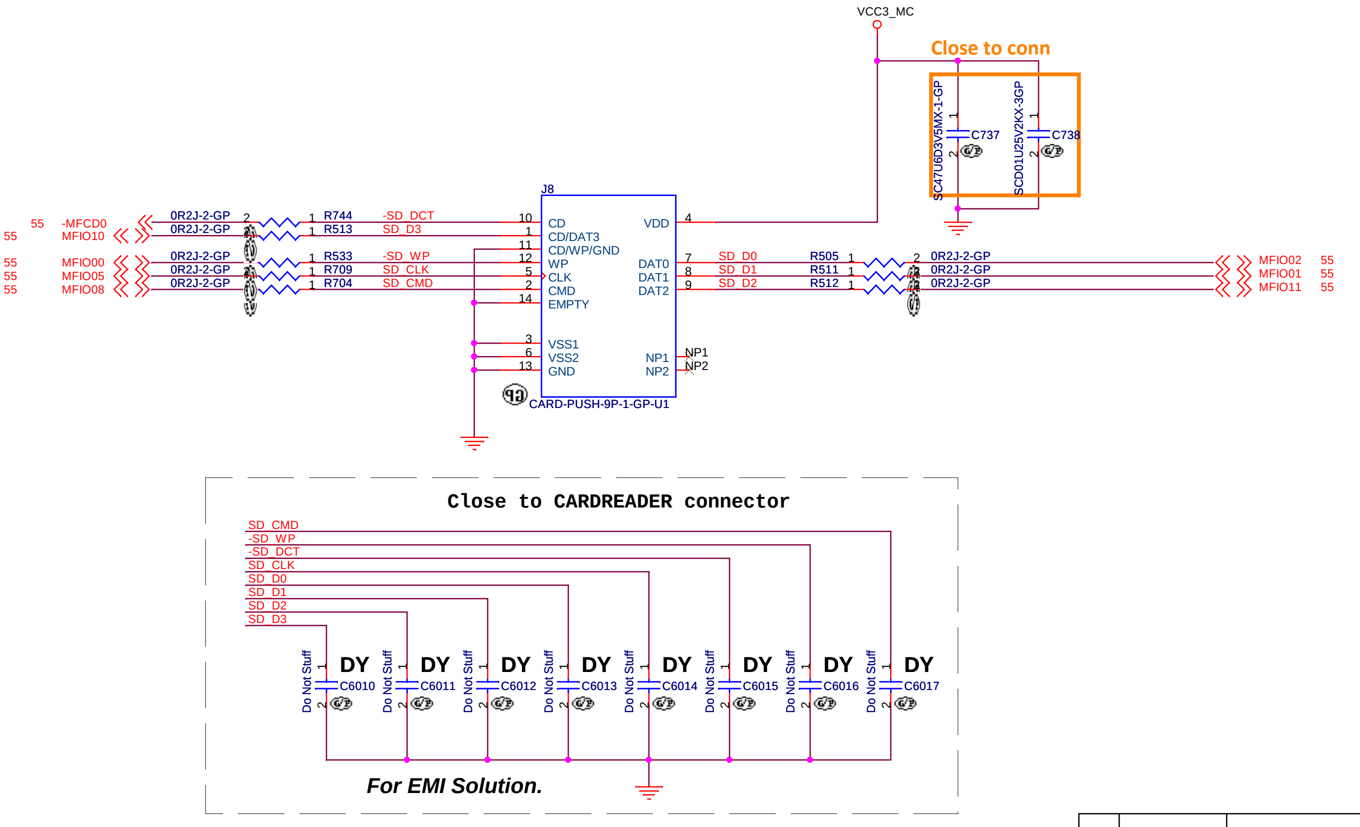
BOM

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: **1394/MEDIA CARD CONTROLLER**

Size: A2 | Document Number: Kendo-3 WS | Rev: SA

Date: Tuesday, December 07, 2010 | Sheet 55 of 107



		U50, U51, U52, U53	Wistron part number
1	TOSHIBA	TC7SBL384AFU-GP	73.7S384.007
2	NXP	74LVC1G384GW	73.1G384.AHH
3	TI	TS5A3167DCKR	74.53167.A9F

BOM

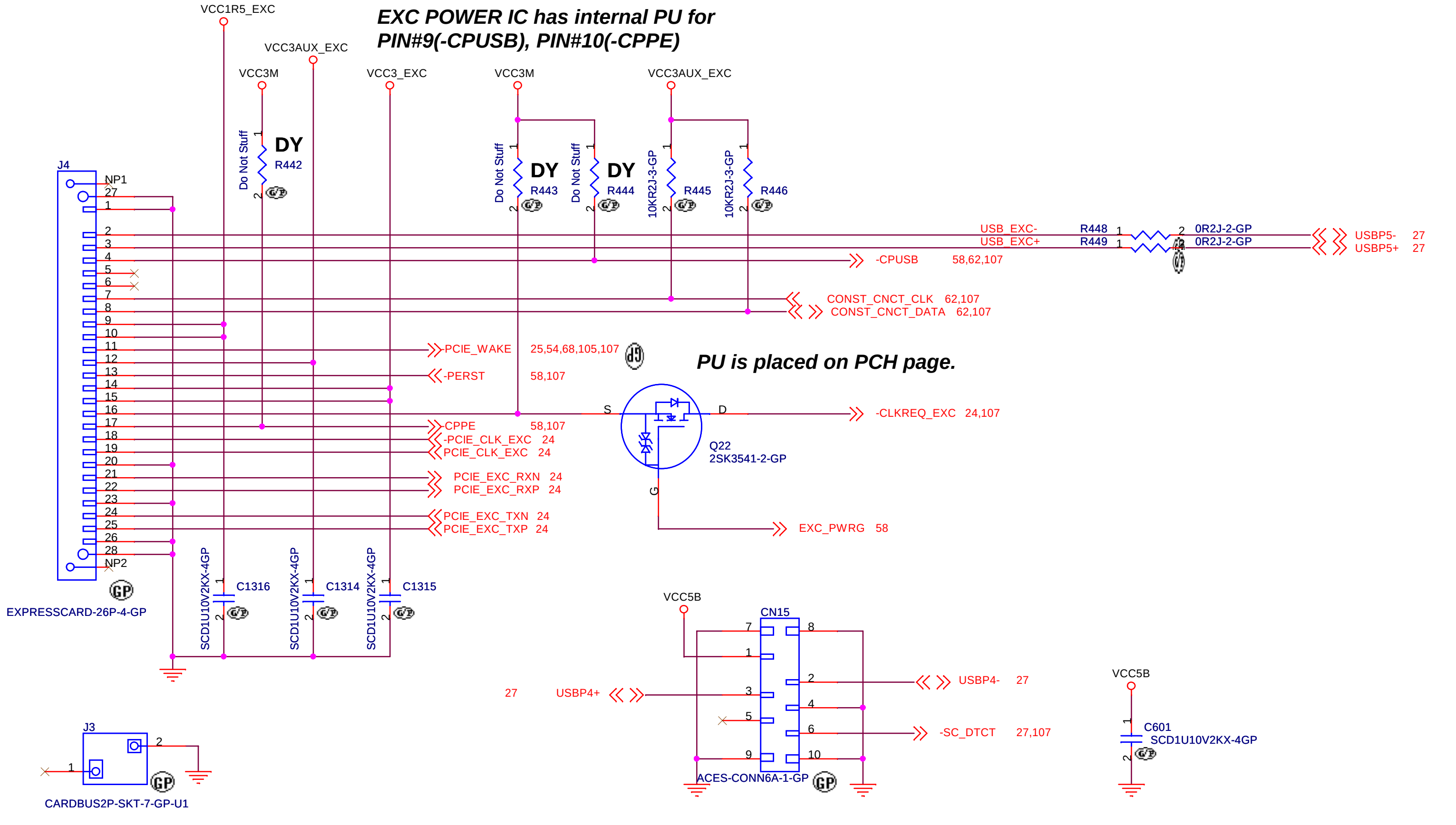
緯創資通 **Wistron Corporation**

21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **MEDIA CARD INTERFACE**

Size: A3 | Document Number: **Kendo-3 WS** | Rev: **SA**

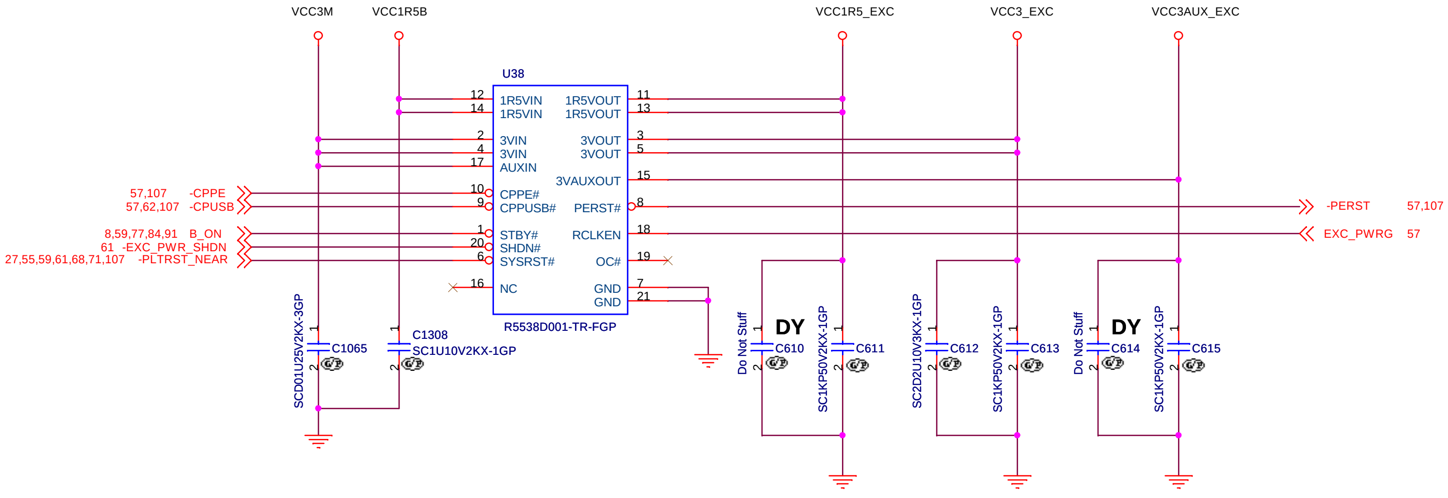
Date: Tuesday, December 07, 2010 | Sheet 56 of 107



BOM

緯創資通 **Wistron Corporation**
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Taipei Hsien 221, Taiwan, R.O.C.

Title	Express Card/SMART CARD IF	
Size: A3	Document Number: Kendo-3 WS	Rev: SA
Date: Tuesday, December 07, 2010	Sheet 57 of 107	



EXPRESS POWER SW table

		U38	Wistron part number
1	ROHM	BD4157MUV	74.04157.073
2	TI	TPS2231MRGPR	45K0234BA
3	NUVOTON	W83L351YG	74.83351.A73

BOM

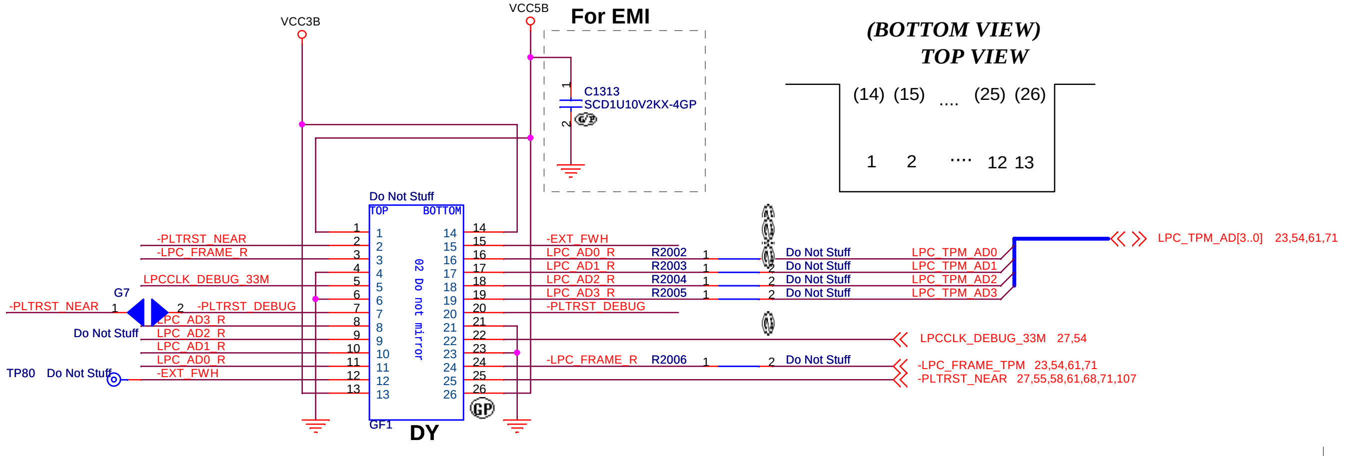
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: SLOT POWER CONTROL

Size: A3 | Document Number: Kendo-3 WS | Rev: SA

Date: Tuesday, December 07, 2010 | Sheet 58 of 107

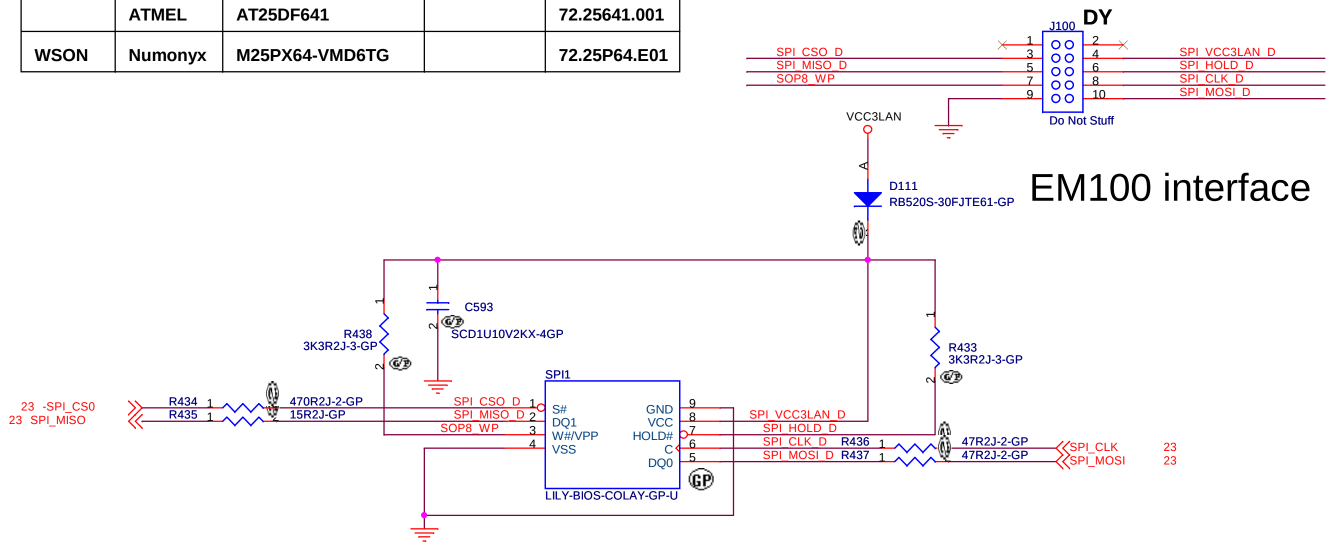
Golden Finger for Debug Board



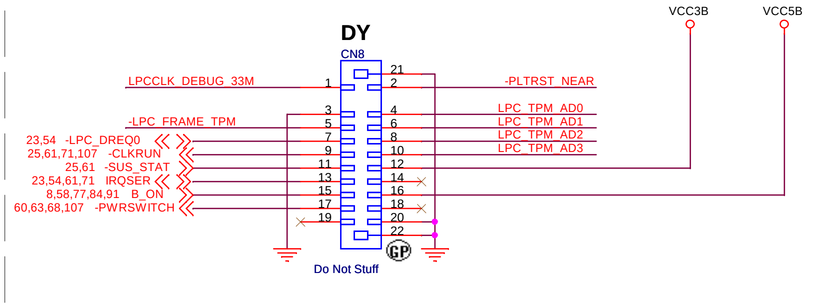
64Mbit SPI FLASH :

Package	Supplier	Vendor P/N	Lenovo P/N	Wistron P/N
SO8	Macronix	MX25L6436EM2I-10G		72.25643.001
	Winbond	W25Q64CVSSIG		72.25Q64.B01
	ATMEL	AT25DF641		72.25641.001
WSON	Numonyx	M25PX64-VMD6TG		72.25P64.E01

Lenovo Debug Tool IF.



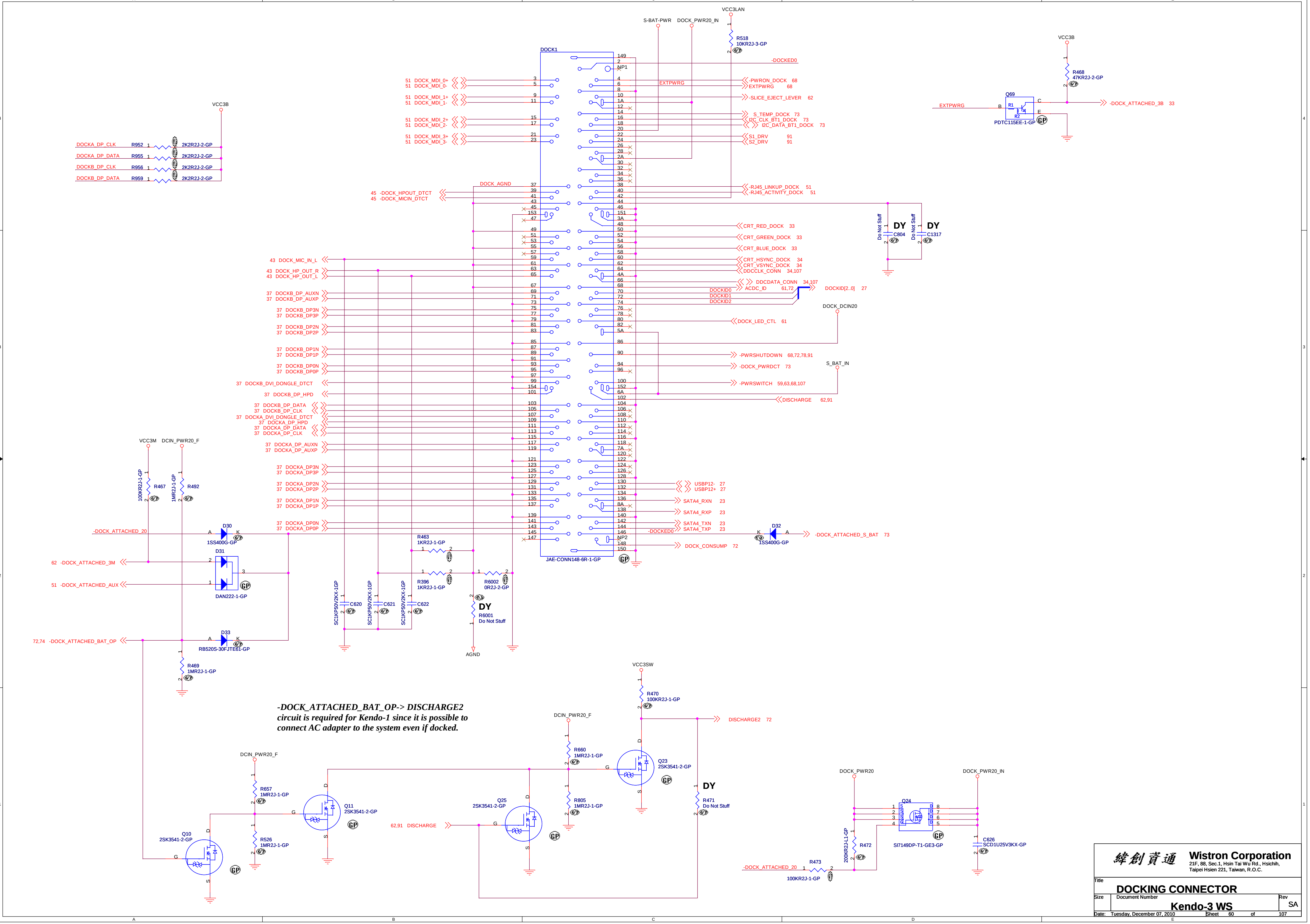
Dual foot print for WSON and SO8.



BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title	SPI FLASH		
Size: A3	Document Number: Kendo-3 WS		Rev: SA
Date: Tuesday, December 07, 2010	Sheet 59 of 107		



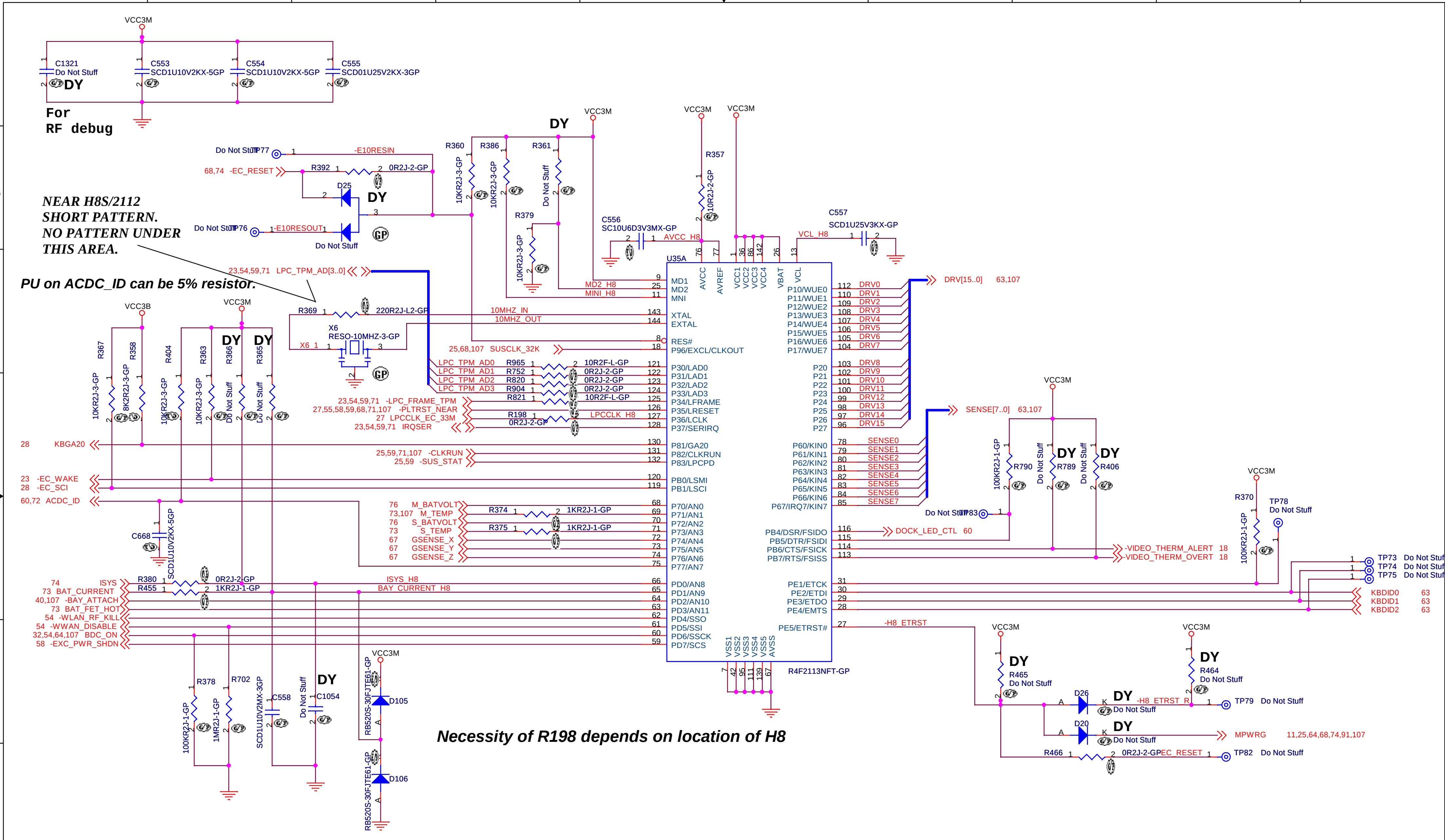
-DOCK_ATTACHED_BAT_OP-> DISCHARGE2 circuit is required for Kendo-1 since it is possible to connect AC adapter to the system even if docked.

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title
DOCKING CONNECTOR

Size	Document Number	Rev
	Kendo-3 WS	SA

Date: Tuesday, December 07, 2010 Sheet 60 of 107

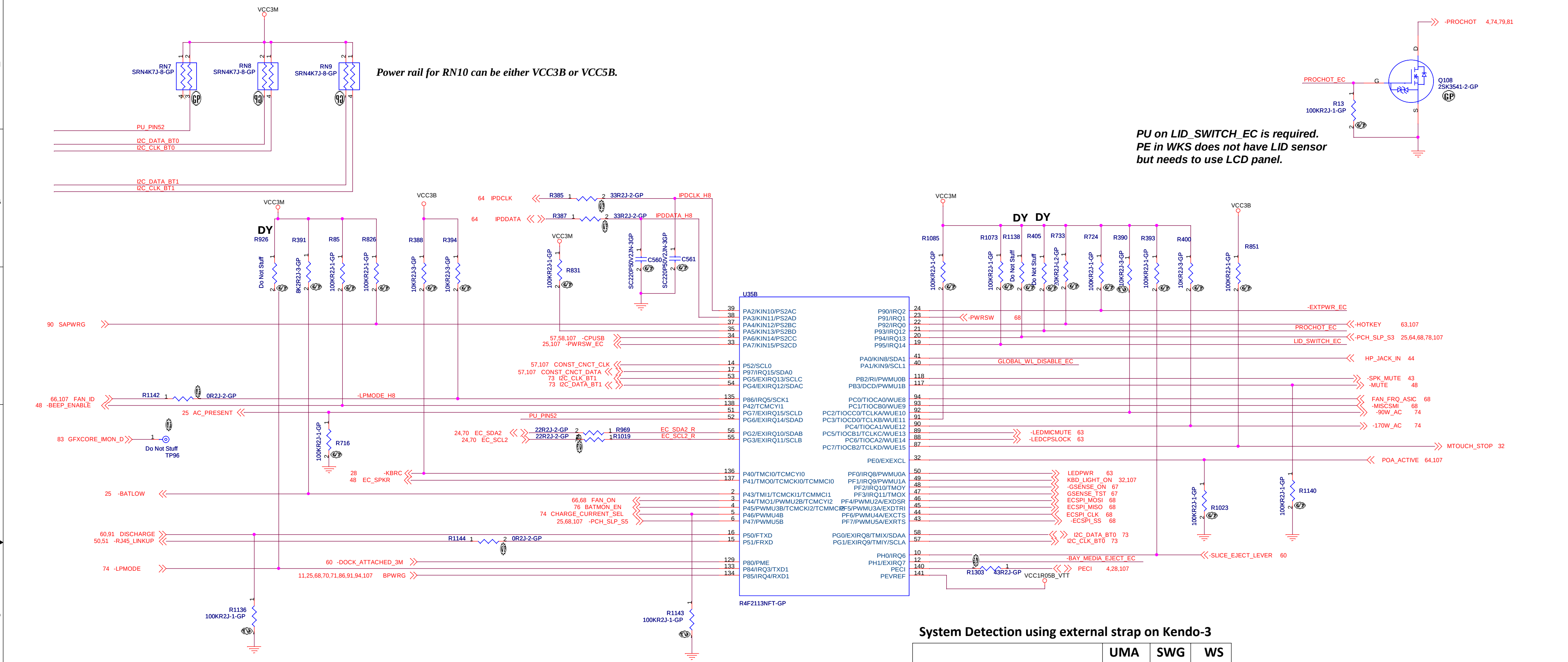


Check H8 source to perform maxpower management

BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	H8S/2112 (1/2)	
Size Custom	Document Number: Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 61 of 107	



System Detection using external strap on Kendo-3

	UMA	SWG	WS
#13 PGPIO3 of Thinker-1(U59)	L	L	H
#35 VIDEO_ID of H8(U35B)	L	H	H

Table

GFX	EXT.	INT.
R831	ASM	NO_ASM
R674	NO_ASM	ASM

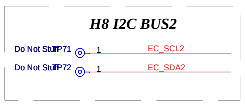
LOGIC

pls. modify this logic table

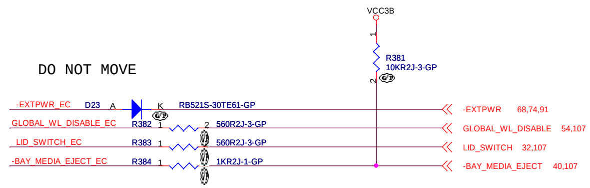
E10A Debug I/F	Enable	Disable
R392	NO ASM	ASM
R466	NO ASM	ASM
D25	ASM	NO ASM
D26	ASM	NO ASM
D20	ASM	NO ASM
R360	ASM	ASM
R361	ASM	NO ASM
R464	ASM	NO ASM
R465	ASM	NO ASM
R379	NO ASM	ASM

LOGIC

TEST PAD X2
BOTTOM SIDE
DO NOT MOVE AFTER FIX



DO NOT MOVE

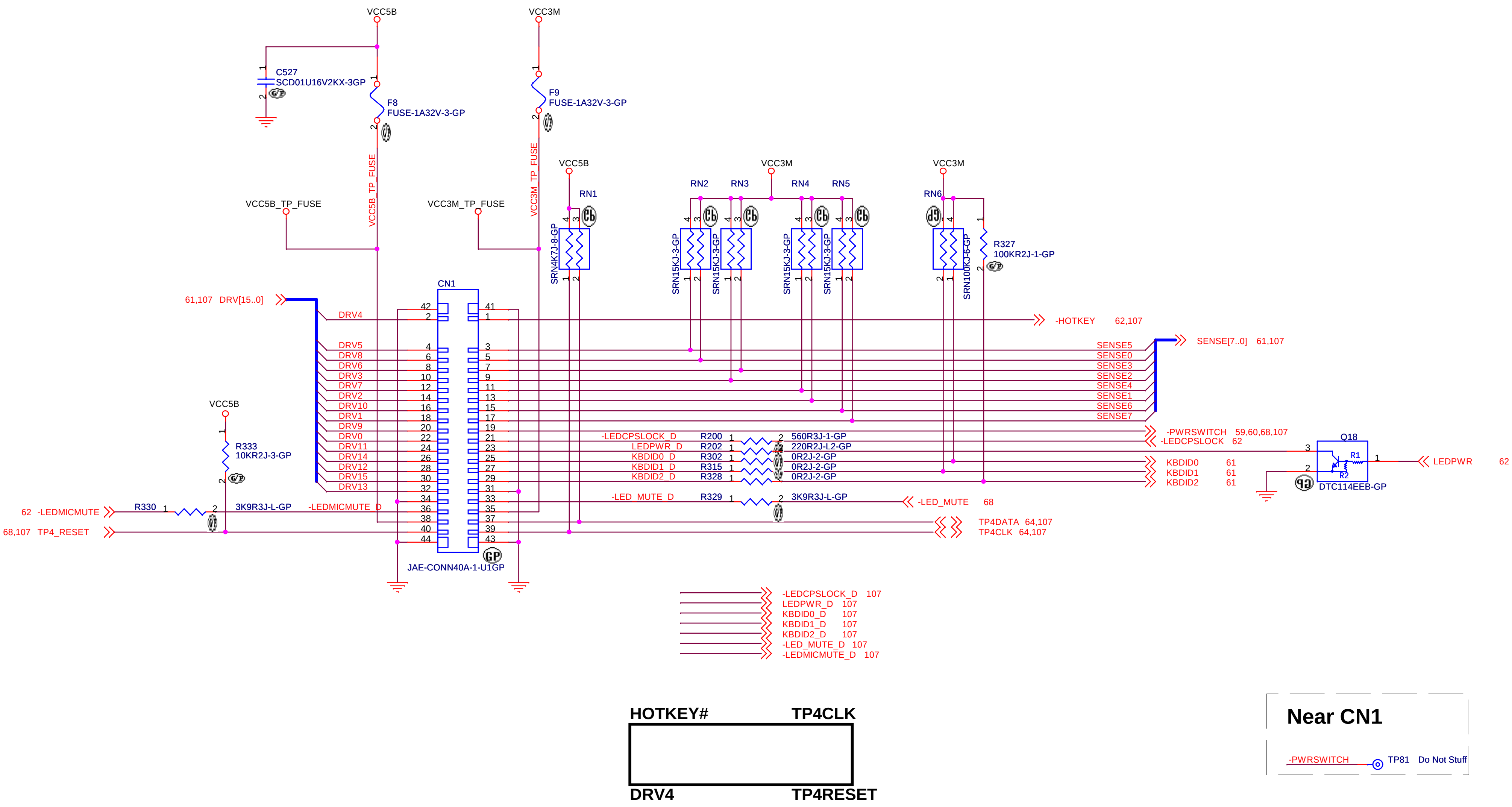


BOM

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: H8S/2112(2/2)
Size: A2 | Document Number: Kendo-3 WS | Rev: SA
Date: Tuesday, December 07, 2010 | Sheet 62 of 107

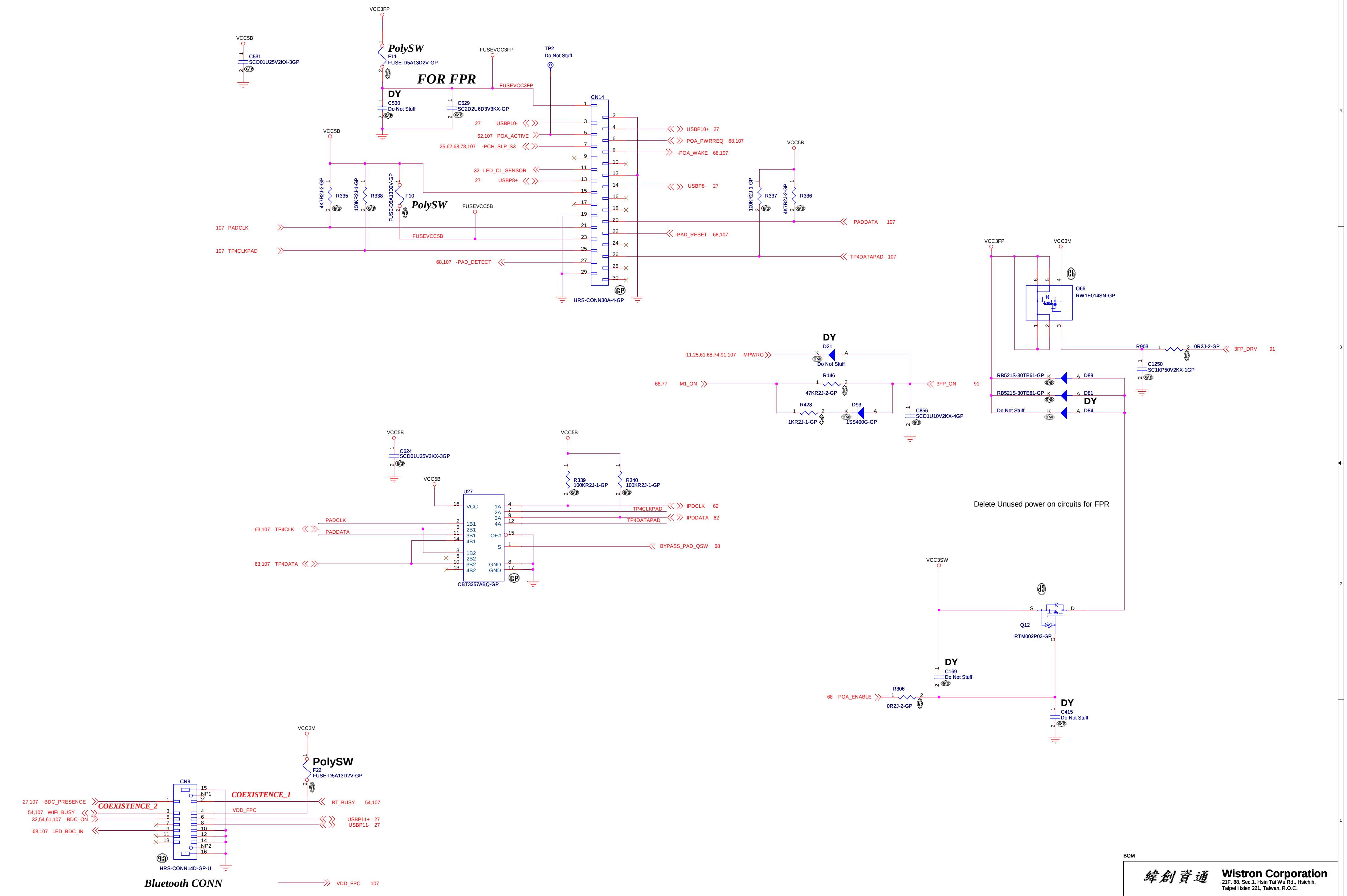
Keyboard Connector



Keyboard Connector Top View

BOM

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title	**KEYBOARD CONN**	
Size A3	Document Number **Kendo-3 WS**	Rev **SA**
Date: Tuesday, December 07, 2010	Sheet 63 of 107	



BOM

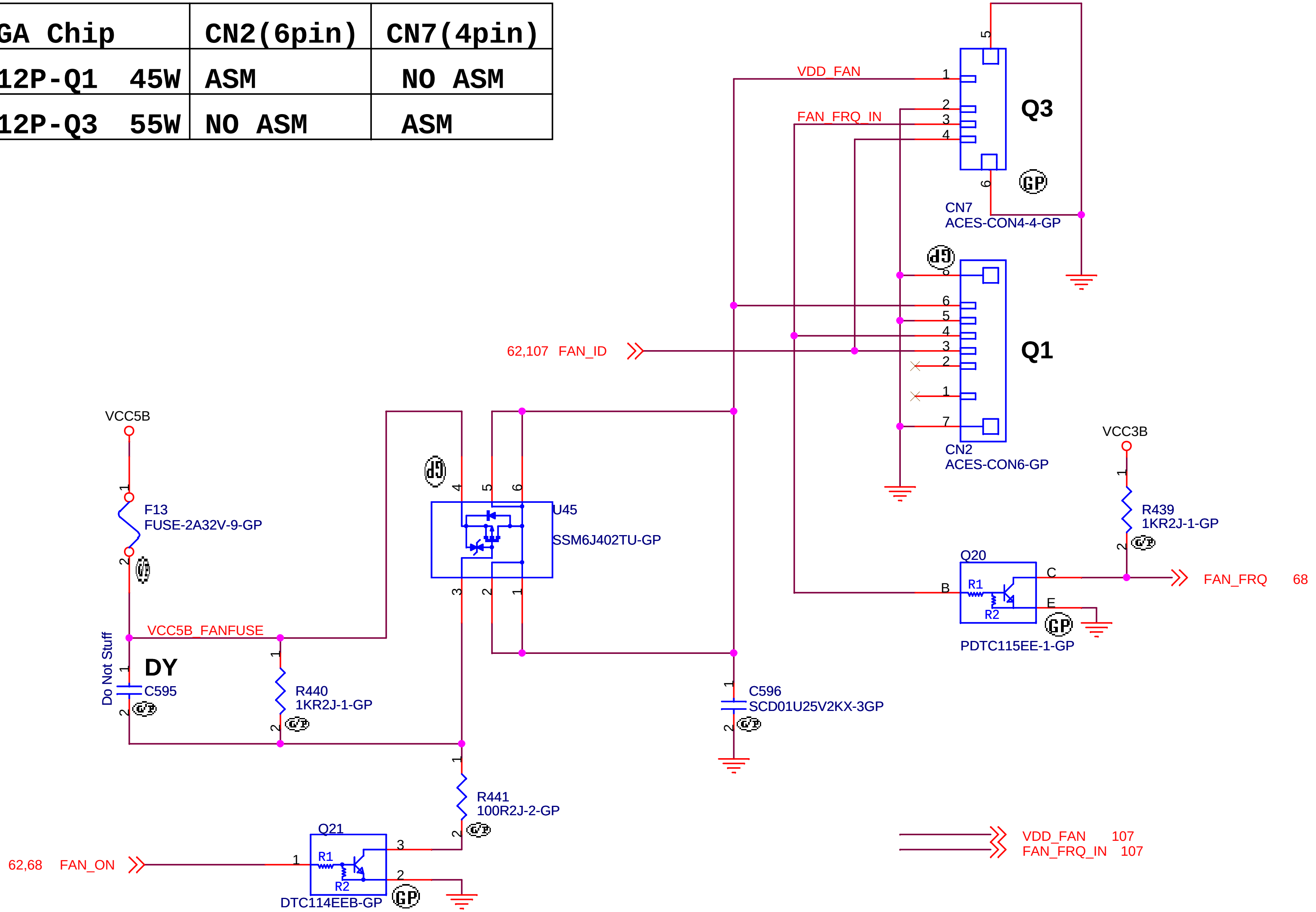
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title	TOUCH PAD CONNECTOR	
Size A2	Document Number Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 64 of 107	

BLANK

BOM

VGA Chip	CN2(6pin)	CN7(4pin)
N12P-Q1 45W	ASM	NO ASM
N12P-Q3 55W	NO ASM	ASM



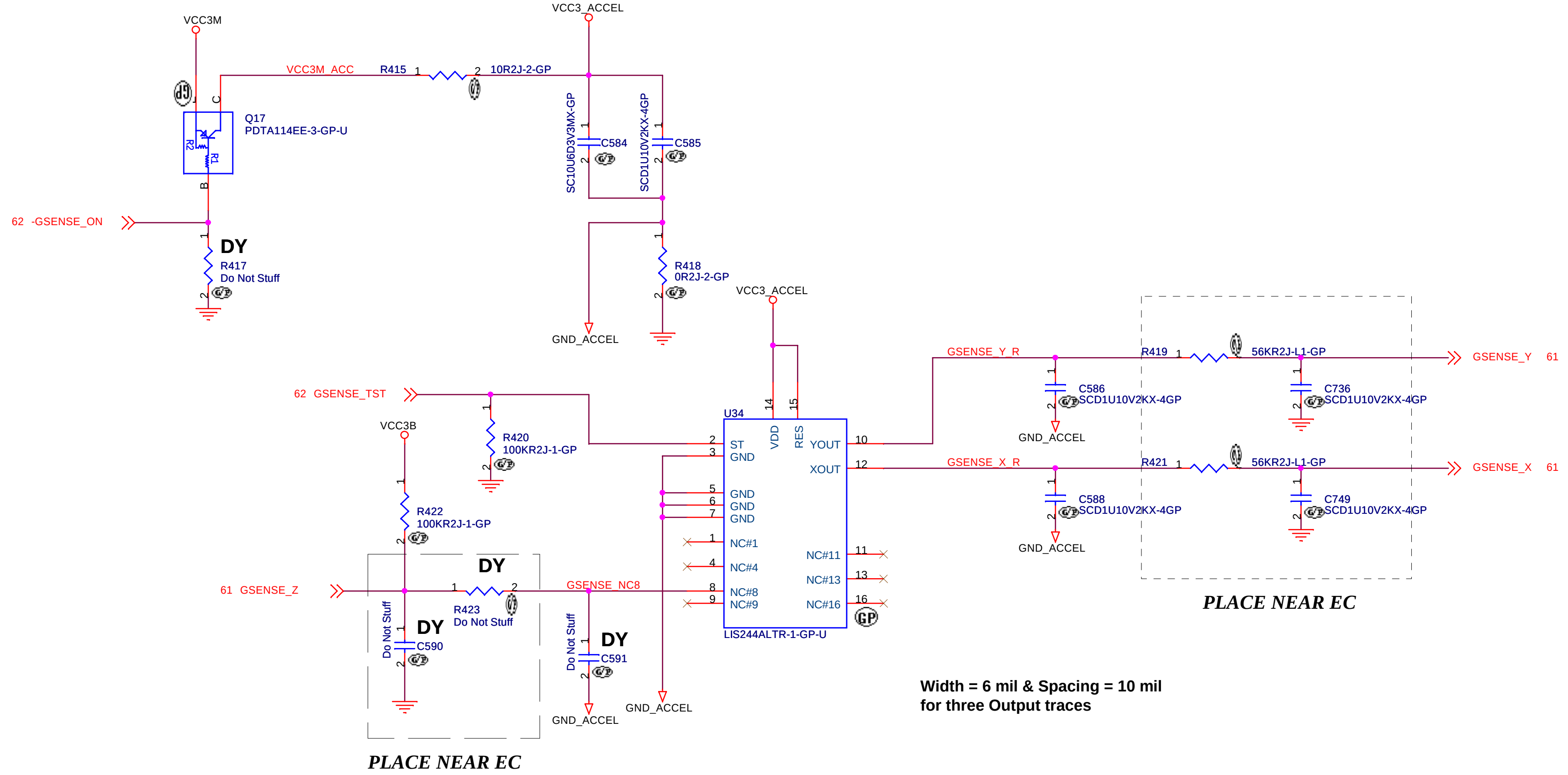
BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title
FAN CONTROL

Size	Document Number	Rev
A4	Kendo-3 WS	SA

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	LIS244AL LIS34AL	NO ACC.
R417	NO-ASM	ASM
R420	ASM	ASM
U34	ASM	NO-ASM
Q17	ASM	NO-ASM
R415	10-OHM	NO-ASM
C585	ASM	NO-ASM
C584	ASM	NO-ASM
C586	ASM	NO-ASM
C588	ASM	NO-ASM
R419	56K	NO-ASM
C736	ASM	NO-ASM
R421	56K	NO-ASM
C749	ASM	NO-ASM
C591	NO-ASM	NO-ASM
R423	NO-ASM	NO-ASM
C590	NO-ASM	NO-ASM
R422	ASM	ASM

Layout Comment :

(1) Place C586, C588, Q17, R415, R417, C584, C585, R420 close to U34.

(2) Avoid routing under DCDC switching area.

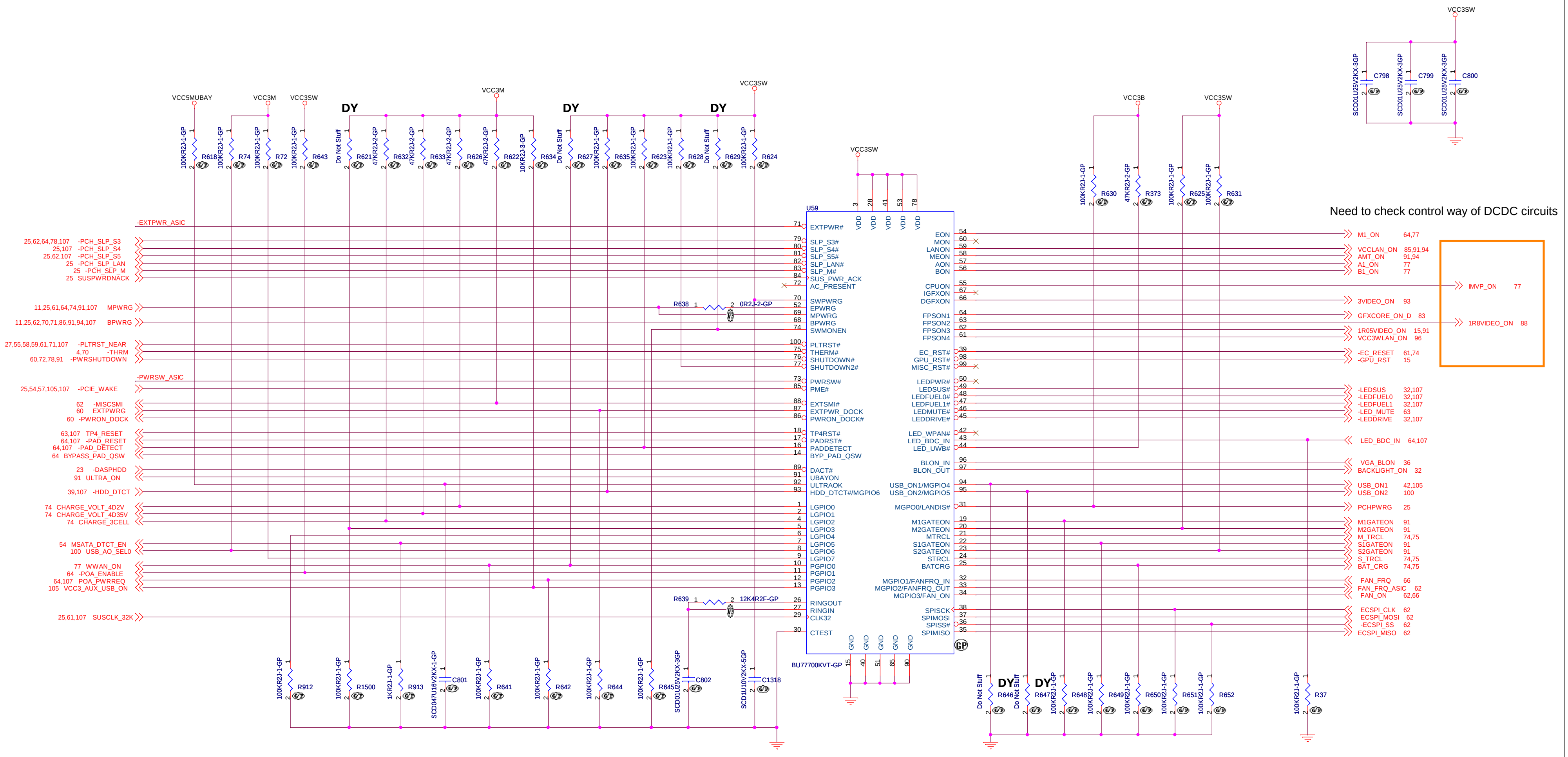
BOM

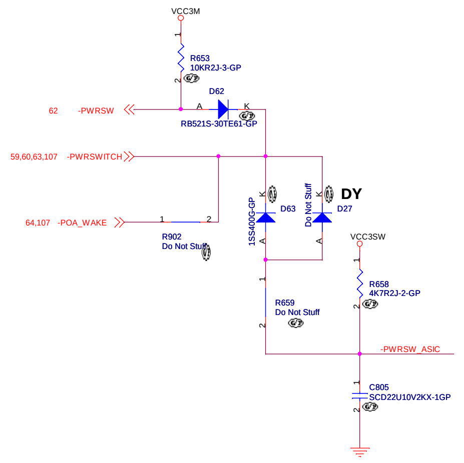
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **G-SENSOR**

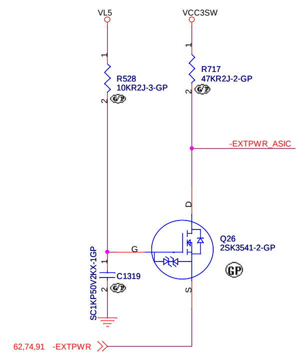
Size: A3 | Document Number: **Kendo-3 WS** | Rev: **SA**

Date: Tuesday, December 07, 2010 |





	Supplier	Vendo P/N	WISTRON P/N
1	ROHM	BU77700KVT	71.77700.00G
2	TOSHIBA	TC200G02EFG-1036JQZ	71.20002.B0G



1023 update -> chand 1R8VIDEO_PLL_ON to 1R05VIDEO_PLL_ON

BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **THINKER-1**

Size: A2 | Document Number: **Kendo-3 WS** | Rev: SA

Date: Tuesday, December 07, 2010 | Sheet 68 of 107

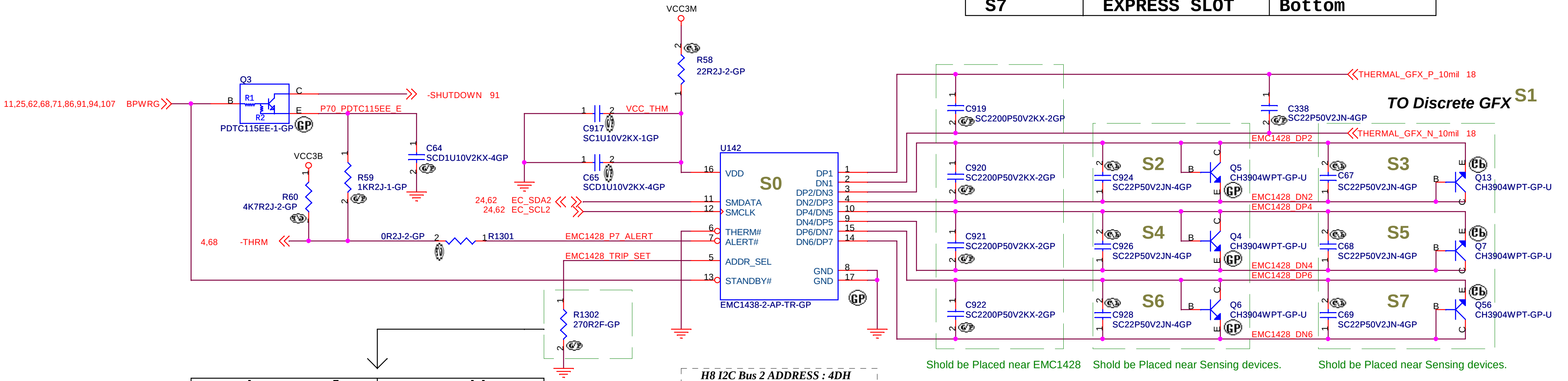
5 4 3 2 1

D C B A

BOM

Title	<Title>	
Size C	Document Number <Doc>	Rev <RevCode>
Date: Tuesday, December 07, 2010	Sheet 69 of 107	

Sensor	Device	Placed on
S0(Body)	PCH/BASE COVER	Bottom
S1	GFX_D	Top
S2	GBE	Bottom
S3	WWAN	Top
S4	DIMM(TOP)	Top
S5	DIMM(BOT)	Bottom
S6	WLAN	Top
S7	EXPRESS SLOT	Bottom



Sensor Location will be decided based on the placement.

Logic →

Resister Value	SMBUS Address
GND	1001 100, 4Ch
270	1001 101, 4Dh
560	1001 110, 4Eh
1K	1001 111, 4Fh
1.5K	1001 001, 49h
2.7K	1001 010, 4Ah
5.6K	1001 011, 4Bh
>=18K	0011 000, 18h

Layout Comment :

(1) Thermal sensor trace lines should not be overlapped with other high frequency trace lines in other layers.
(2) Also, it should not be overlapped with large amplitude trace lines either.

BOM

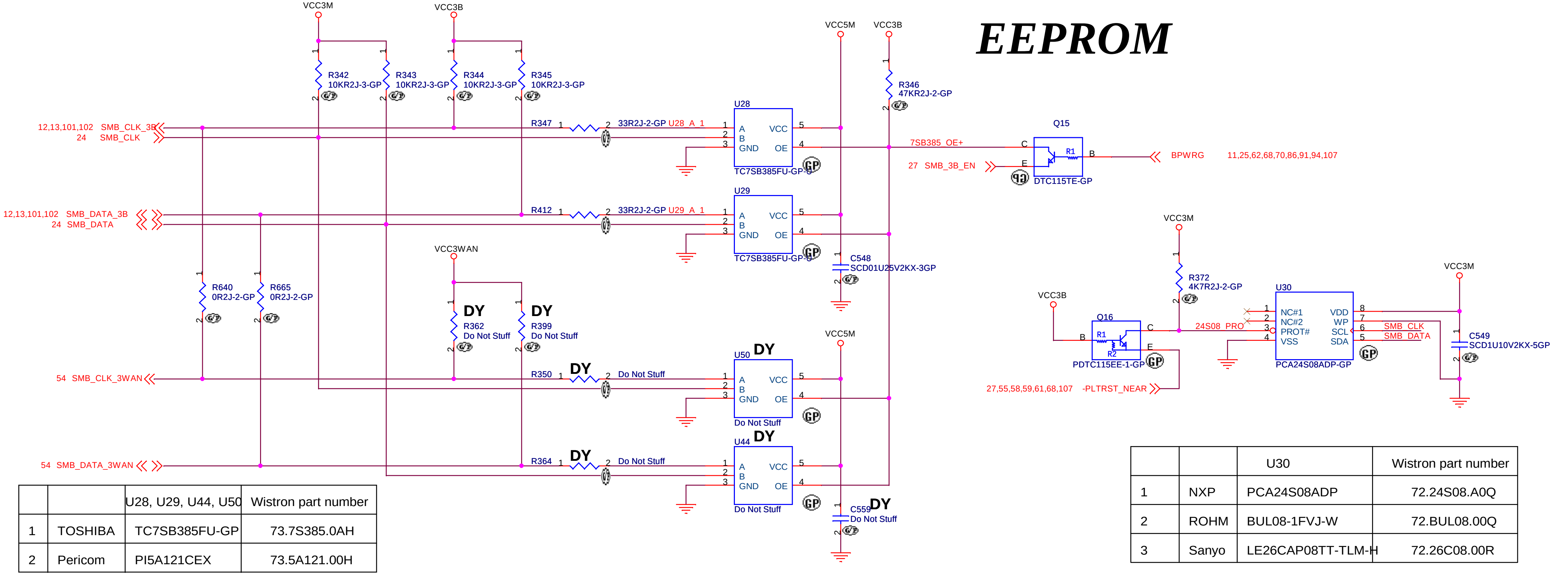
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: THERMAL SENSOR

Size: A3 | Document Number: Kendo-3 WS | Rev: SA

Date: Tuesday, December 07, 2010 | Sheet 70 of 107

EEPROM



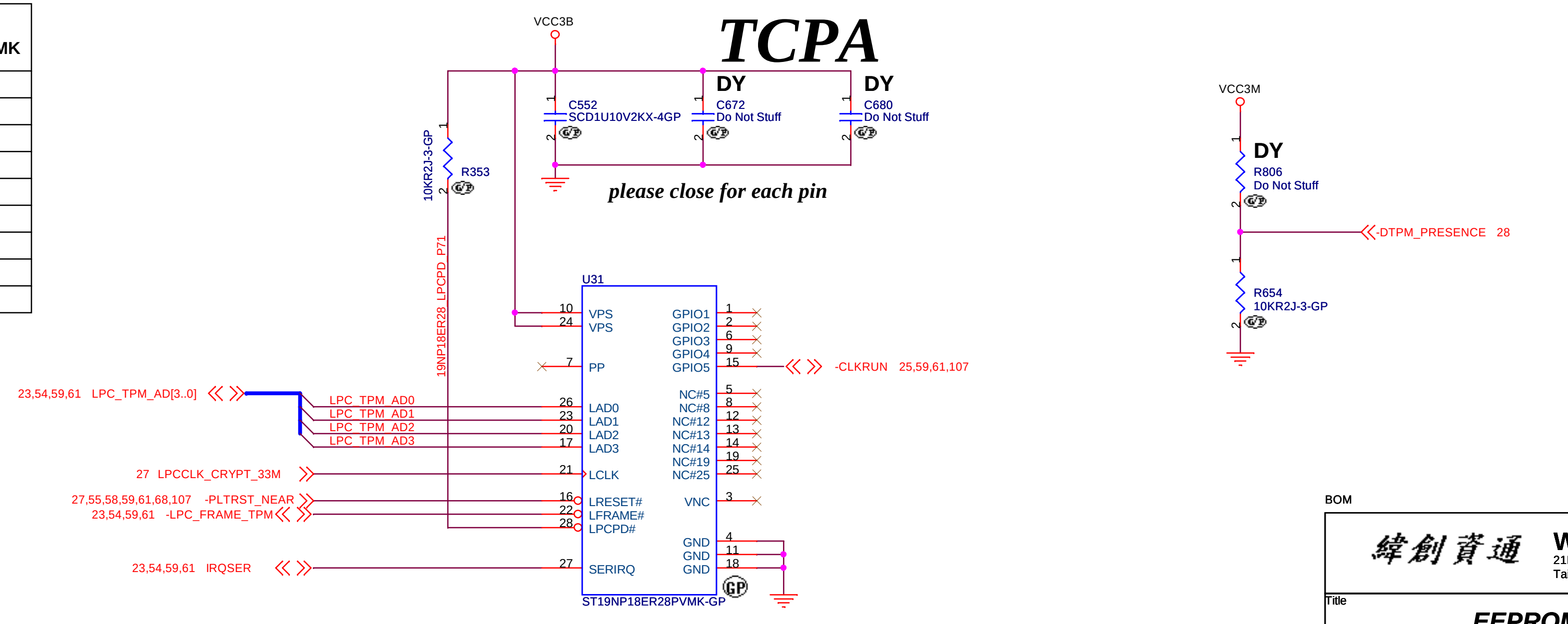
		U28, U29, U44, U50	Wistron part number
1	TOSHIBA	TC7SB385FU-GP	73.7S385.0AH
2	Pericom	PI5A121CEX	73.5A121.00H

		U30	Wistron part number
1	NXP	PCA24S08ADP	72.24S08.A0Q
2	ROHM	BUL08-1FVJ-W	72.BUL08.00Q
3	Sanyo	LE26CAP08TT-TLM-H	72.26C08.00R

TCPA

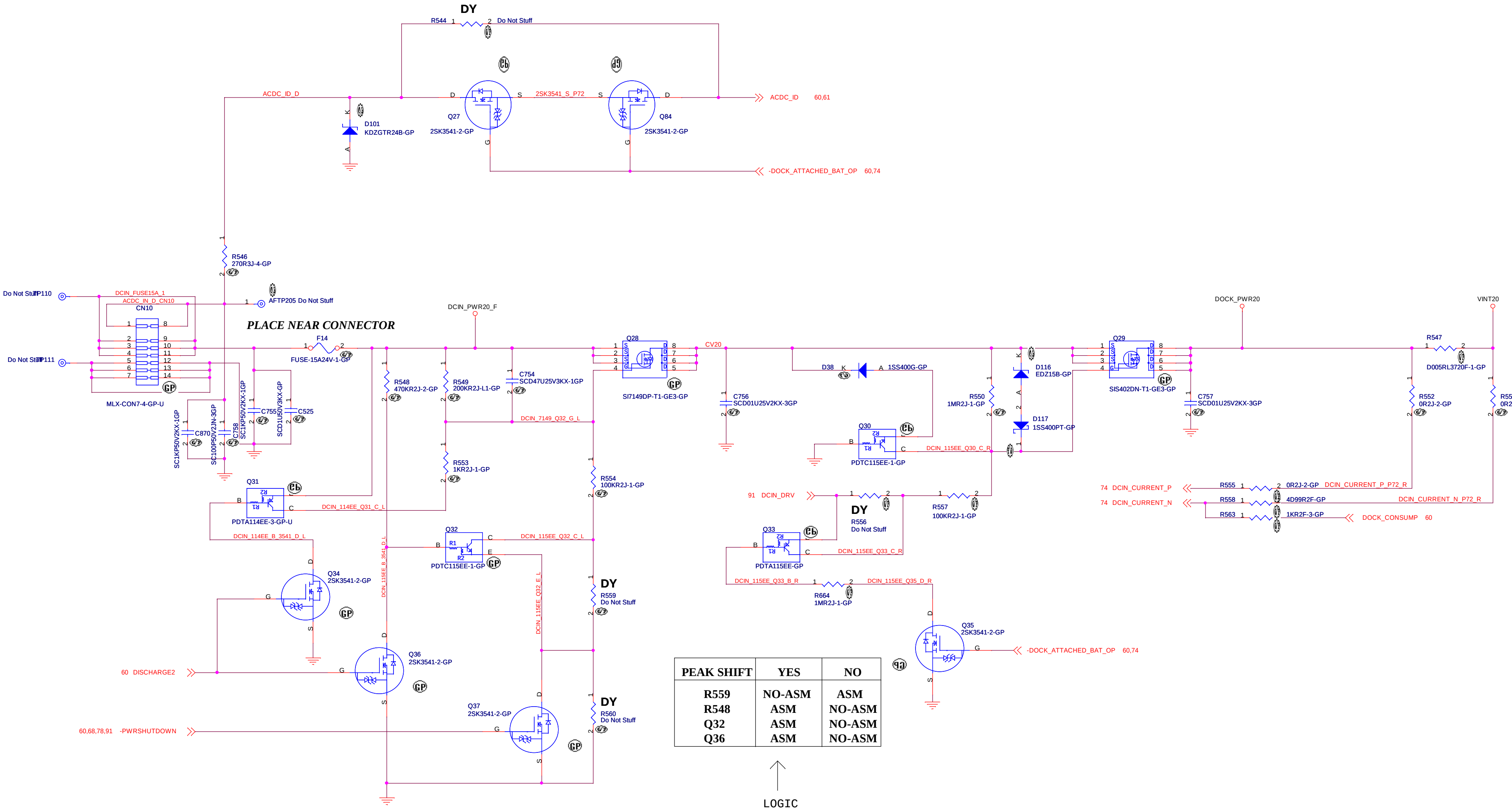
	NO TPM	ST Micro ST19NP18ER28PVMK
U31	NO_ASM	ASM
C552	NO_ASM	ASM
C672	NO_ASM	NO_ASM
R354	NO_ASM	ASM
R371	NO_ASM	NO_ASM
R953	NO_ASM	NO_ASM
R353	NO_ASM	NO_ASM
R806	ASM	NO_ASM
R654	NO_ASM	ASM

LOGIC



BOM

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	EEPROM/TCPA
Size A3	Document Number Kendo-3 WS — Rev SA
Date: Tuesday, December 07, 2010	Sheet 71 of 107



PEAK SHIFT	YES	NO
R559	NO-ASM	ASM
R548	ASM	NO-ASM
Q32	ASM	NO-ASM
Q36	ASM	NO-ASM

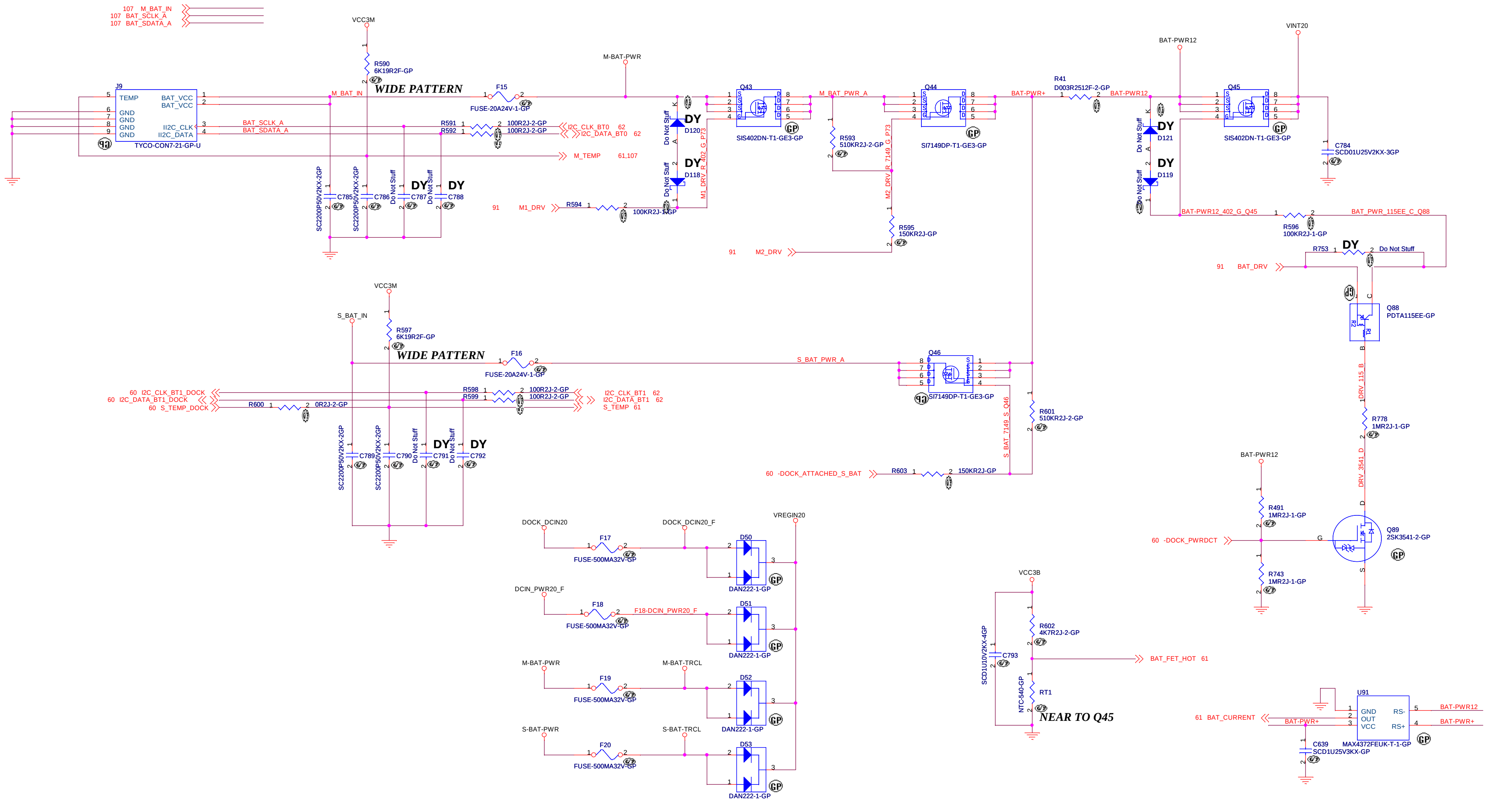
BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: **DC-IN**

Size: A2 | Document Number: Kendo-3 WS | Rev: SA

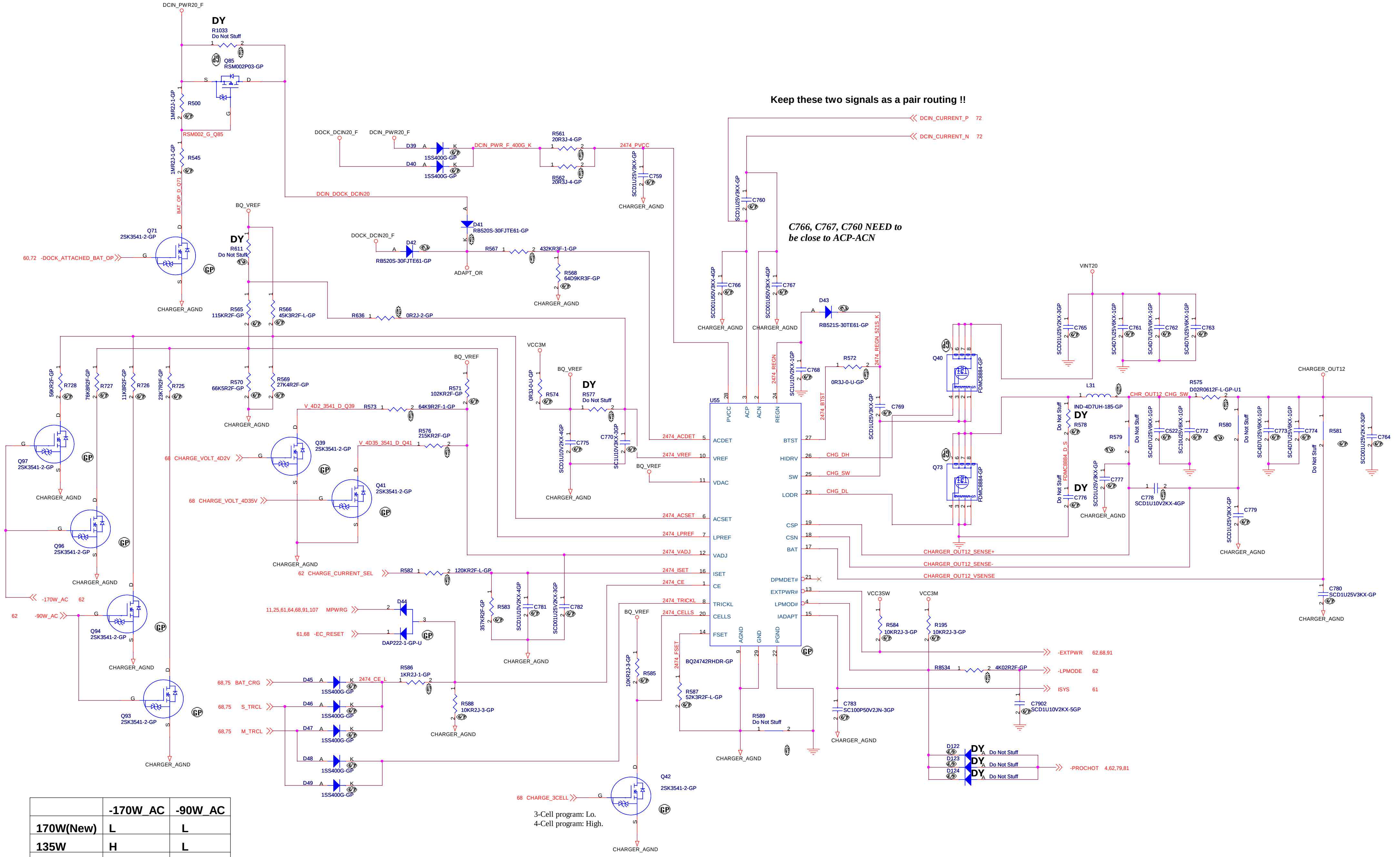
Date: Tuesday, December 07, 2010 | Sheet 72 of 107



BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	**BATTERY INPUT**	
Size A2	Document Number **Kendo-3 WS**	Rev SA
Date: Tuesday, December 07, 2010	Sheet 73 of 107	



	-170W_AC	-90W_AC
170W(New)	L	L
135W	H	L
65W/90W	H	H

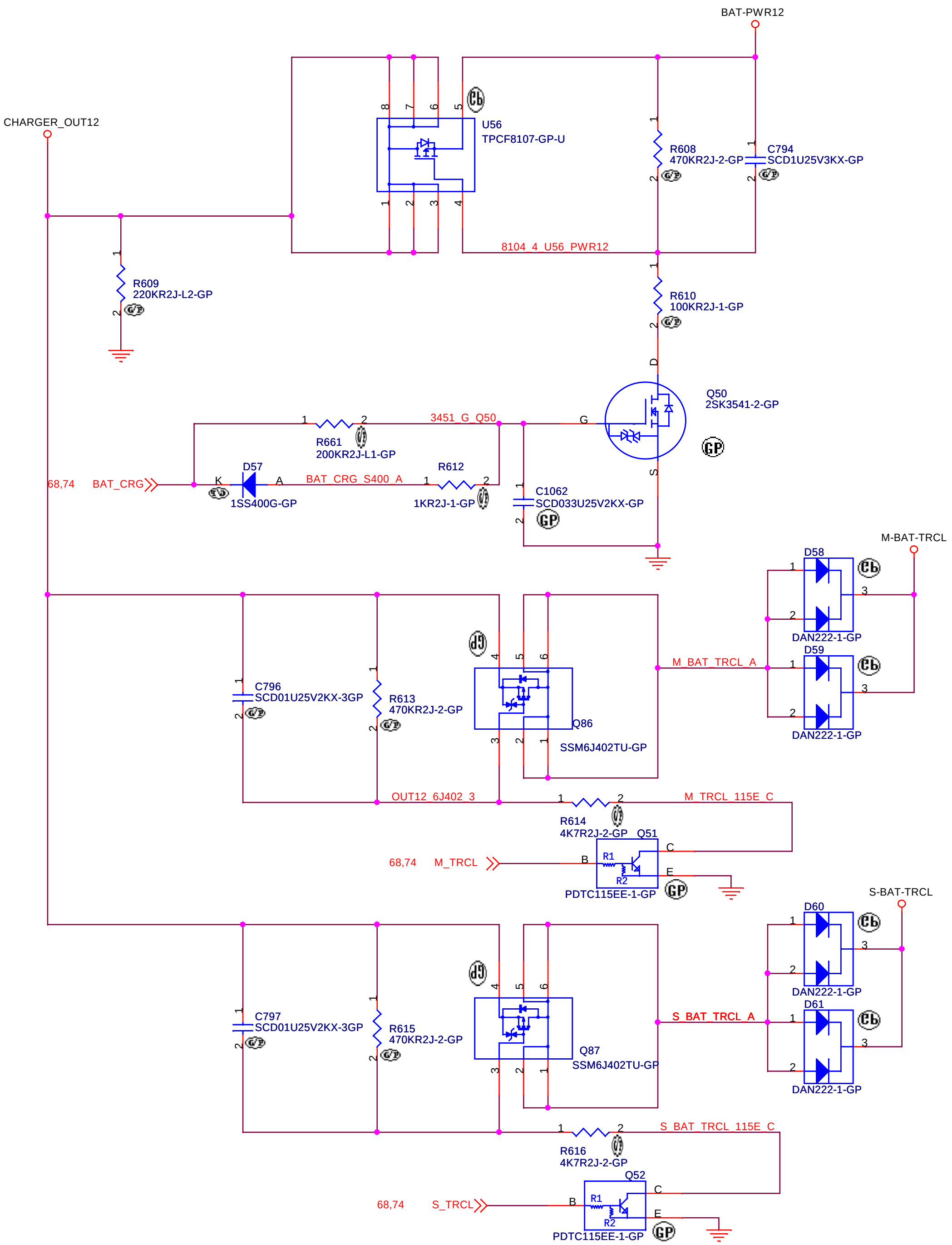
BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: **BATTERY CHARGER (BQ24742)**

Size: A2 | Document Number: Kendo-3 WS | Rev: SA

Date: Tuesday, December 07, 2010 | Sheet 74 of 107

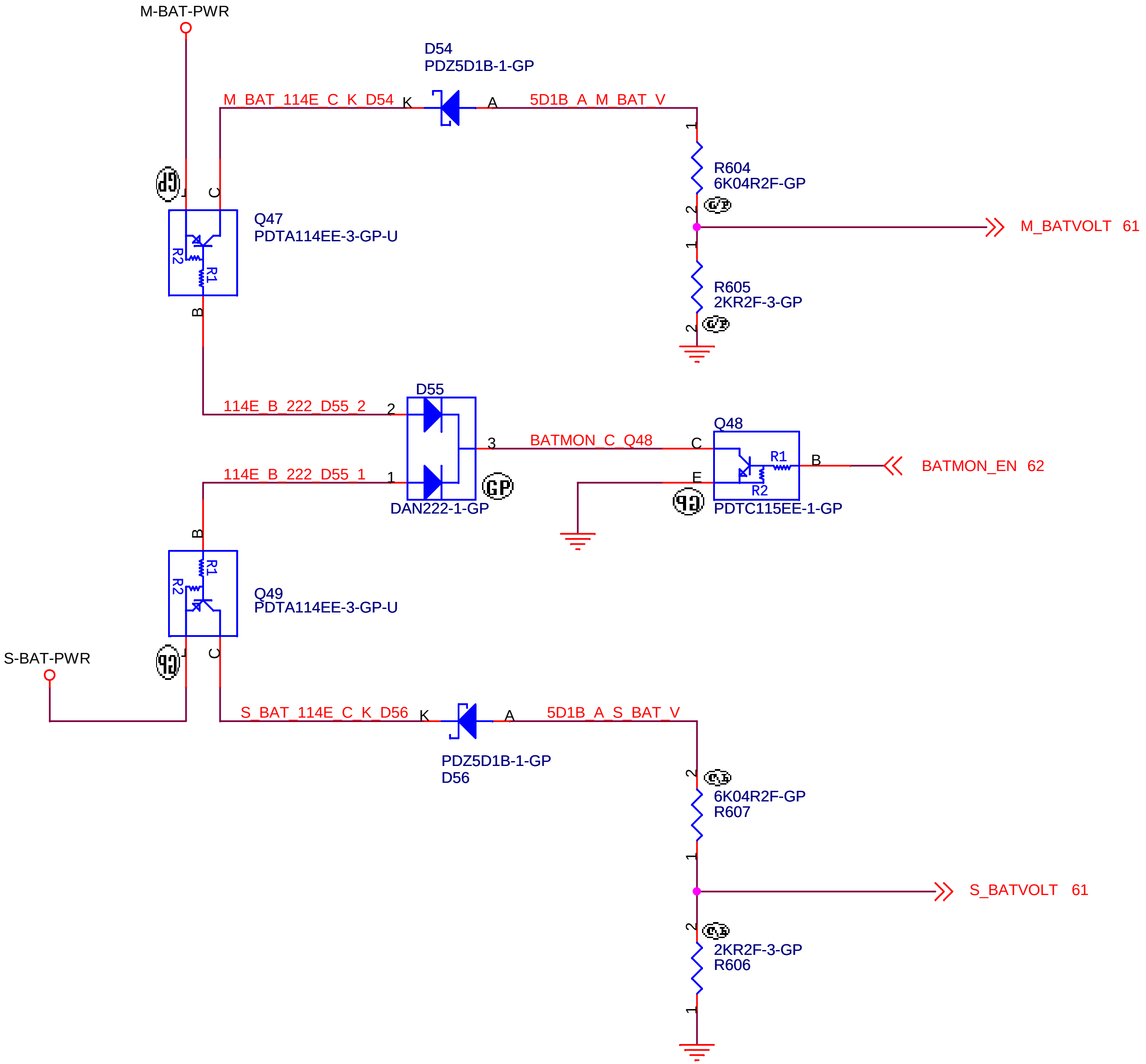


BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

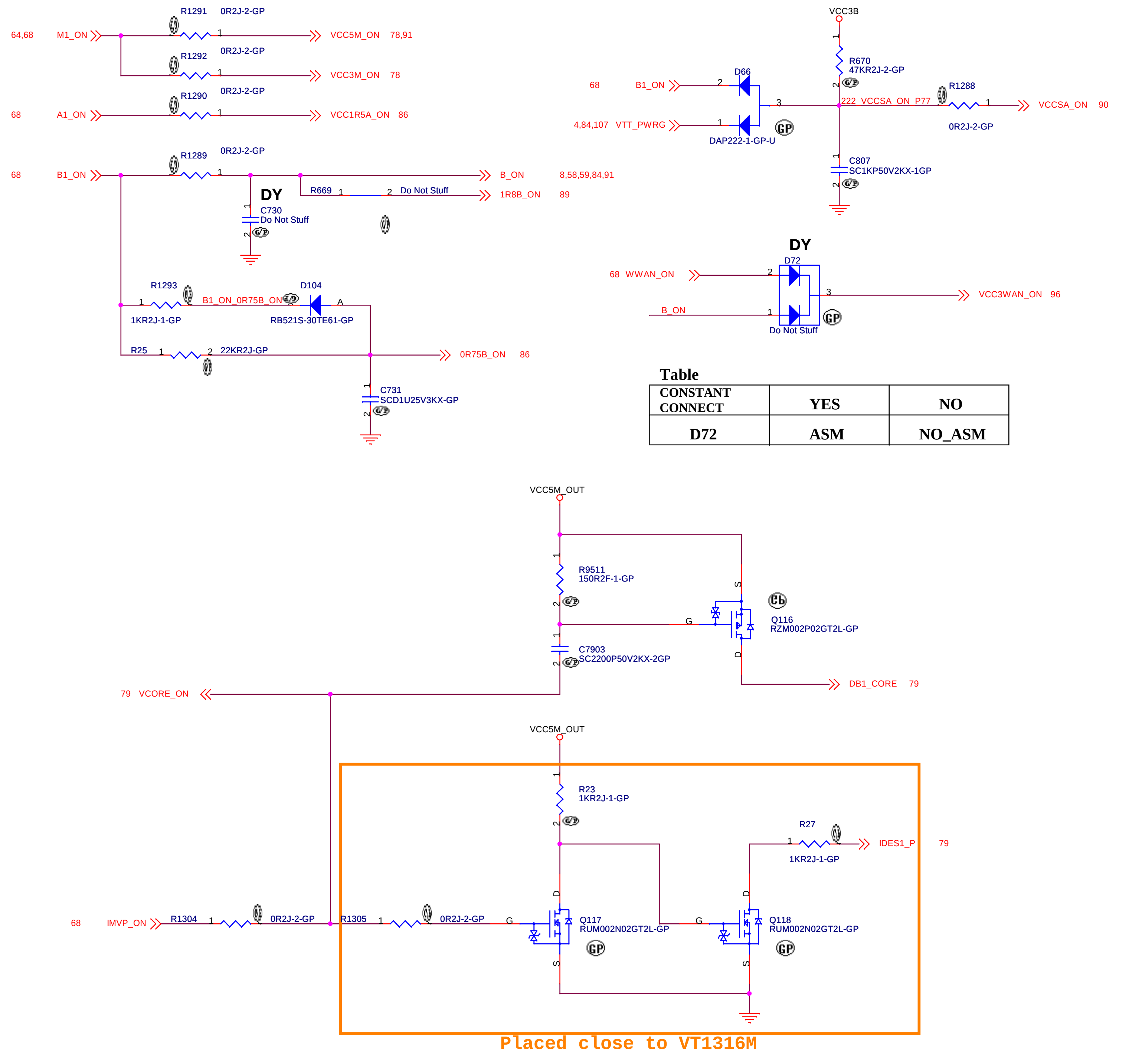
Title		
CHARGER SELECT		
Size: A3	Document Number: **Kendo-3 WS**	Rev: SA
Date: Tuesday, December 07, 2010	Sheet 75 of 107	

VOUT = 0.249 (VBAT - 5)



BOM

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	***BATTERY MONITOR***
Size A4	Document Number **Kendo-3 WS** — Rev **SA**
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Table

CONSTANT CONNECT	YES	NO
D72	ASM	NO_ASM

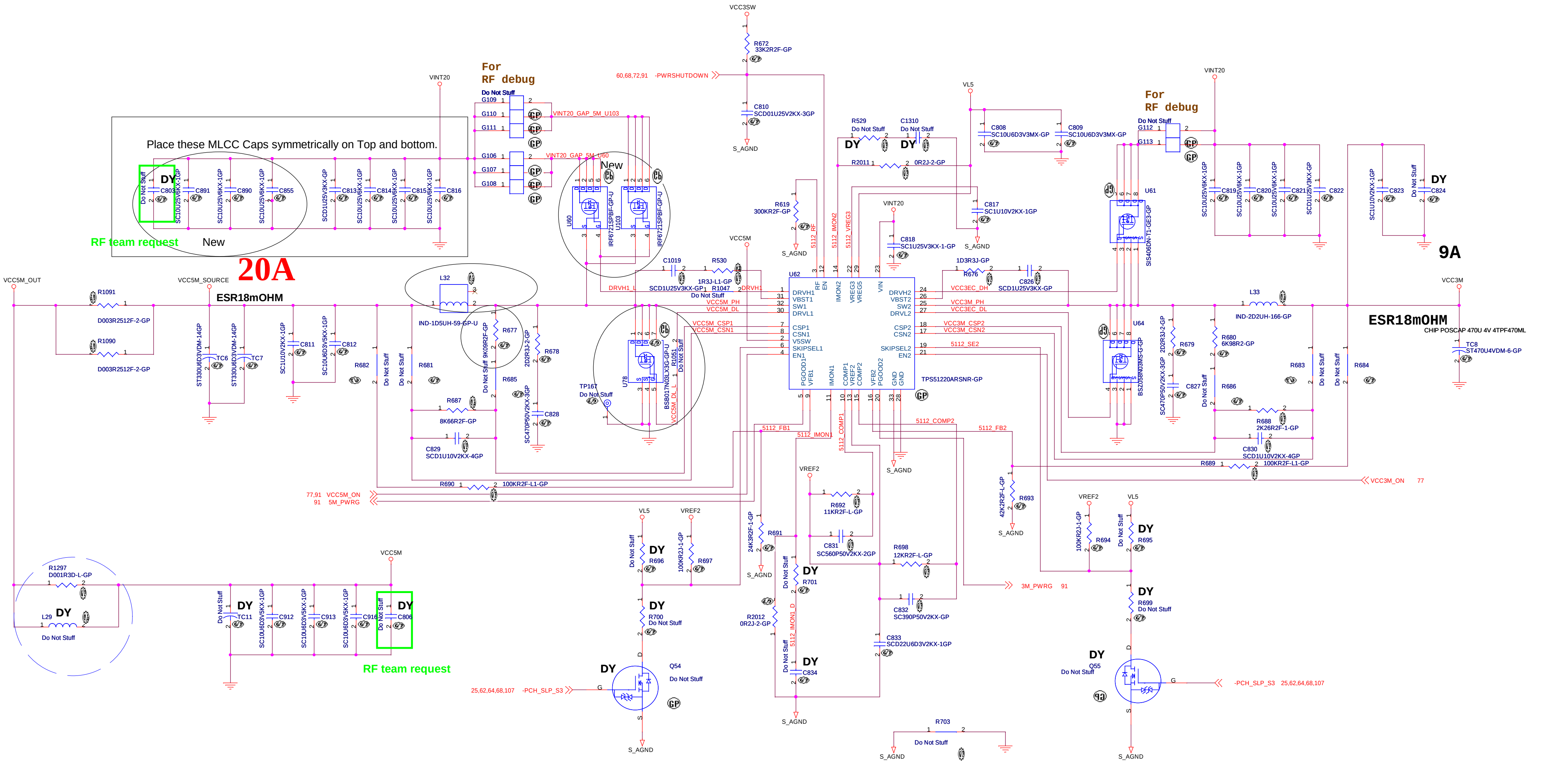
BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **POWER SEQUENCE**

Size	Document Number	Rev
A3	Kendo-3 WS	SA

Date: Tuesday, December 07, 2010 Sheet 77 of 107



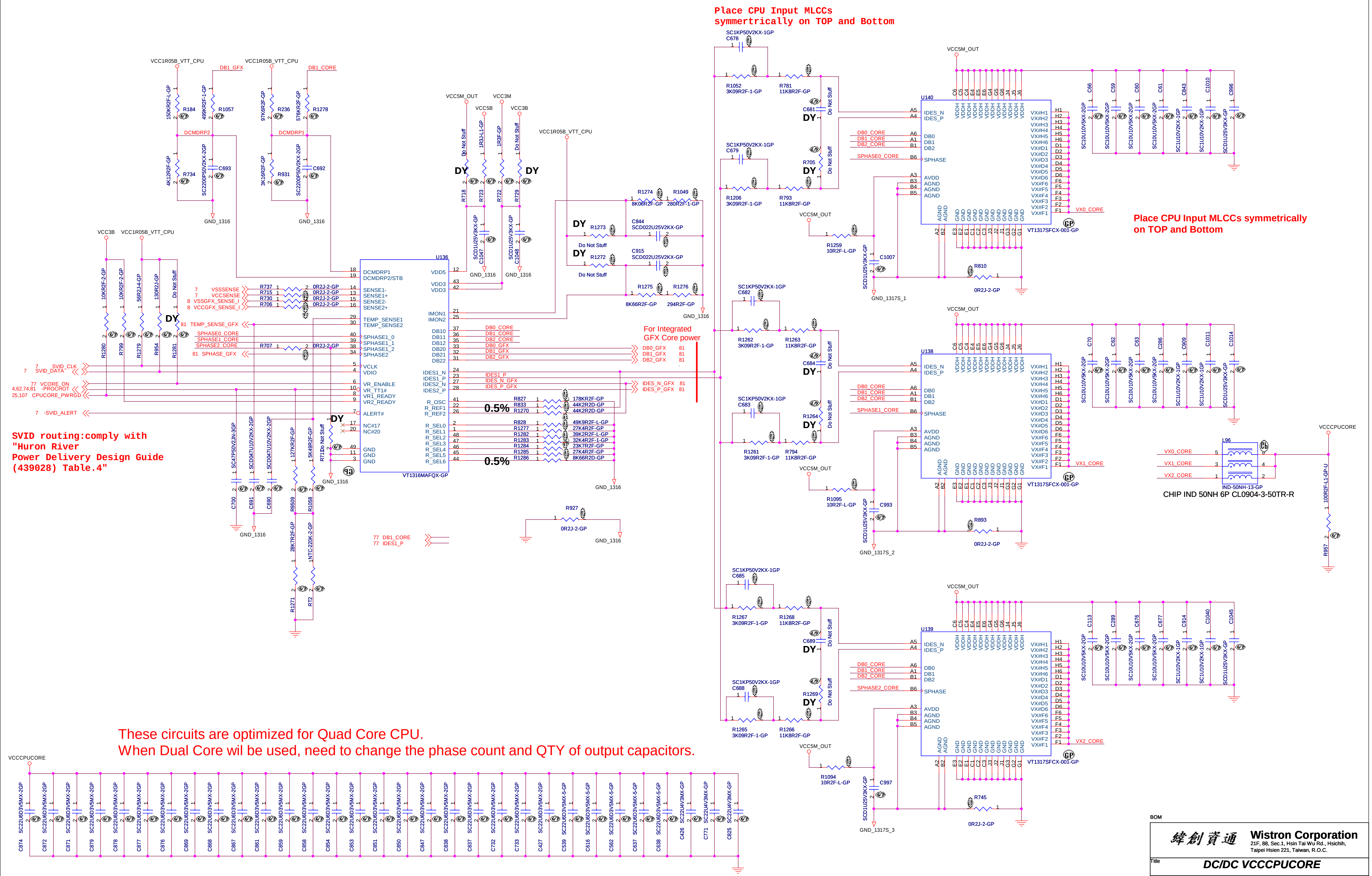
BOM

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: DC/DC VCC5M/VCC3M

Size	Document Number	Rev
A2	Kendo-3 WS	SA

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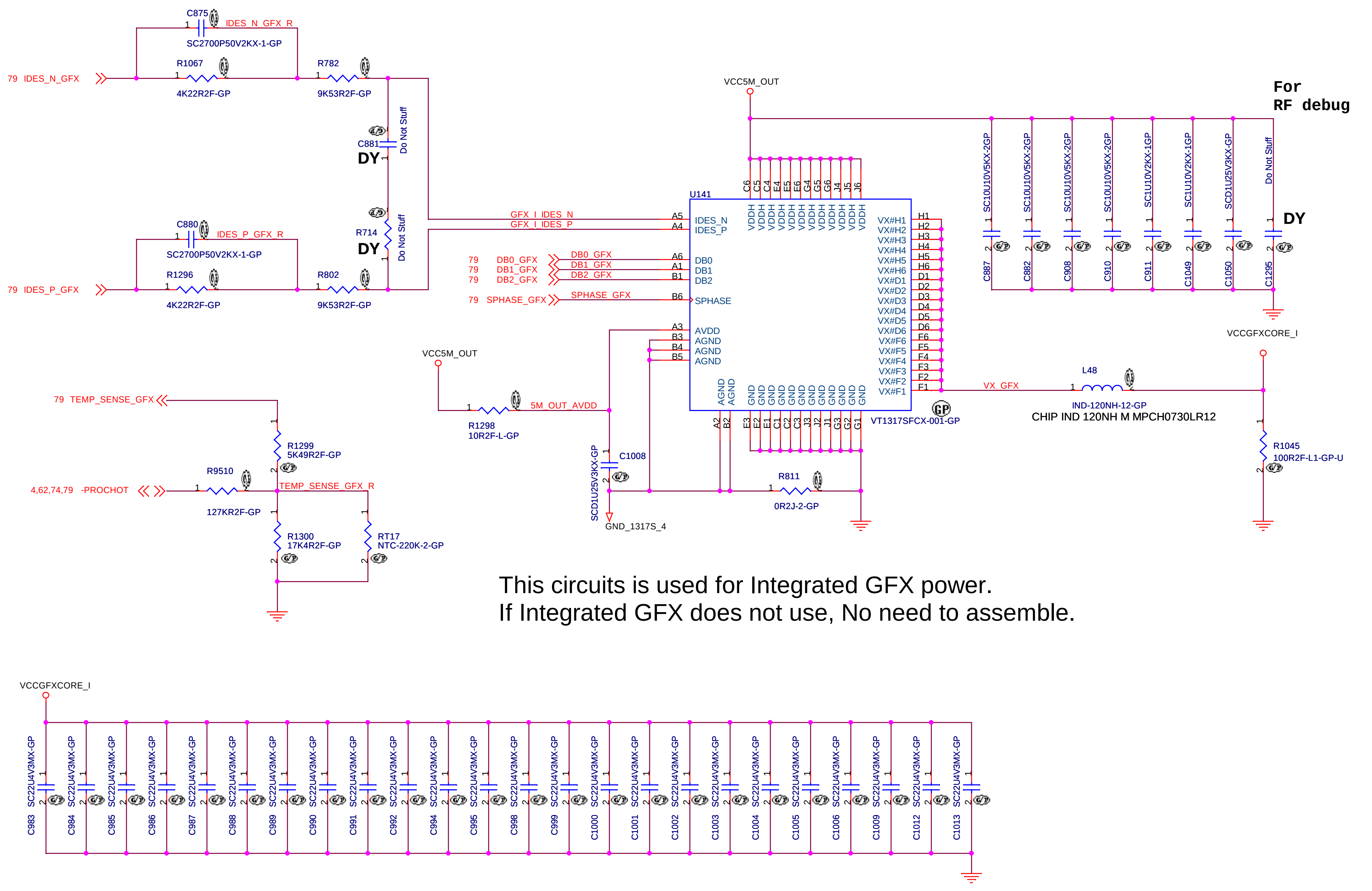


	緯創資通 **Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	**DC/DC VCCCPUCORE**
Size A2	Document Number: **Kendo-3 WS** — Rev SA
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緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.		
Title	***BLANK***		
Size A4	Document Number **Kendo-3 WS**		Rev **SA**
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This circuits is used for Integrated GFX power.
If Integrated GFX does not use, No need to assemble.

BOM

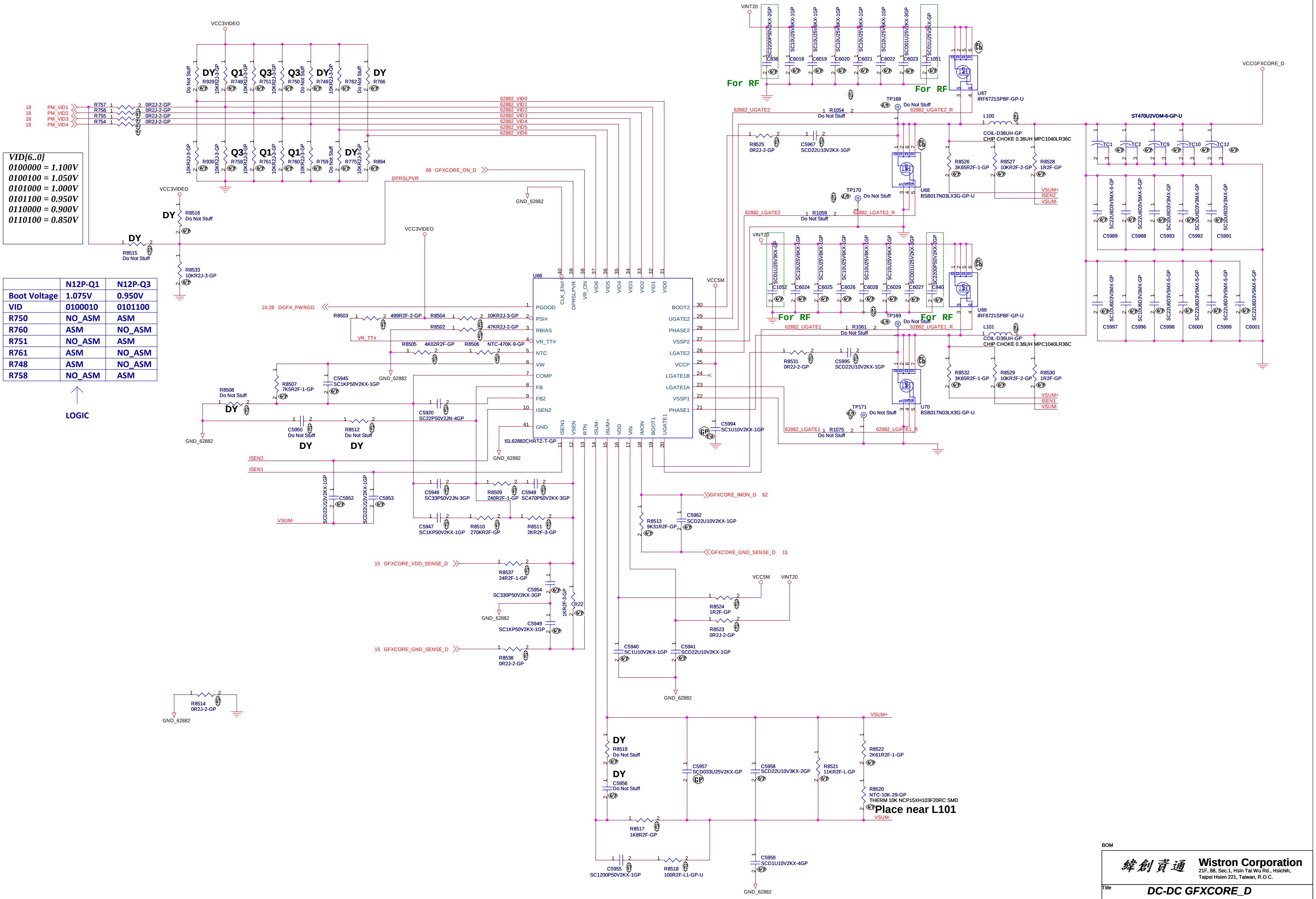
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	VCCGFXCRE_I	
Size A3	Document Number Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 81 of 107	

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緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	***BLANK***
Size A4	Document Number **Kendo-3 WS** / Rev **SA**
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VID[6..0]
0100000 = 1.100V
0100100 = 1.050V
0101000 = 1.000V
0101100 = 0.950V
0110000 = 0.900V
0110100 = 0.850V

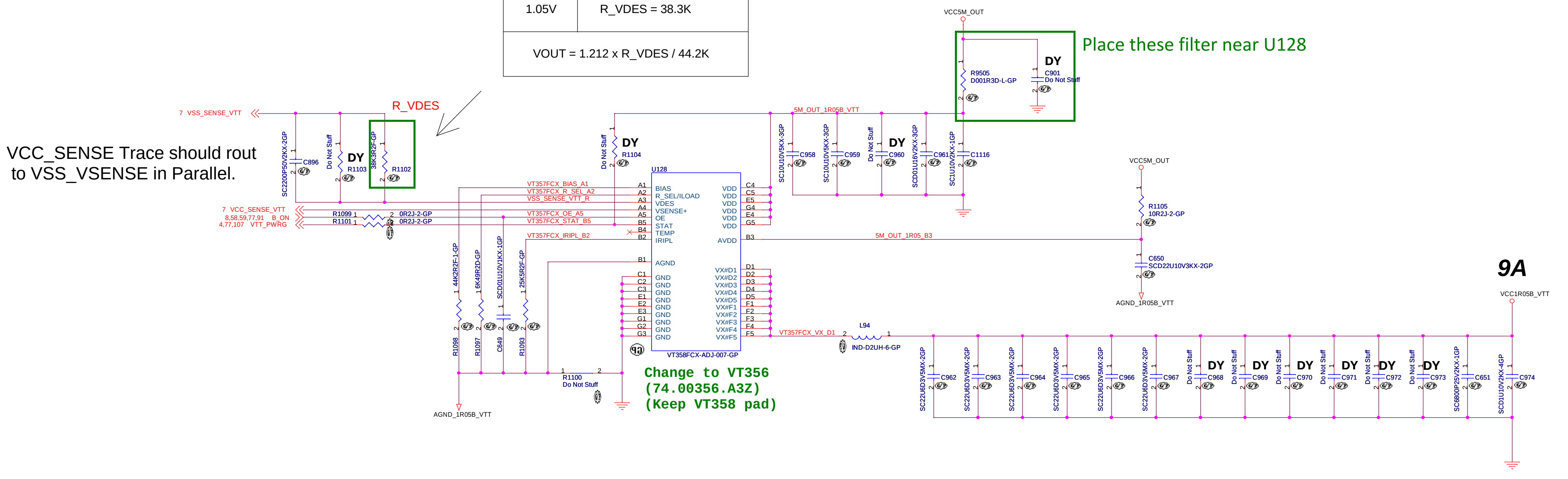
	N12P-Q1	N12P-Q3
Boot Voltage	1.075V	0.950V
VID	0100010	0101100
R750	NO_ASM	ASM
R760	ASM	NO_ASM
R751	NO_ASM	ASM
R761	ASM	NO_ASM
R748	ASM	NO_ASM
R758	NO_ASM	ASM

LOGIC

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title	DC-DC GFXCORE_D	
Size A2	Document Number: Kendo-3 WS	Rev SA
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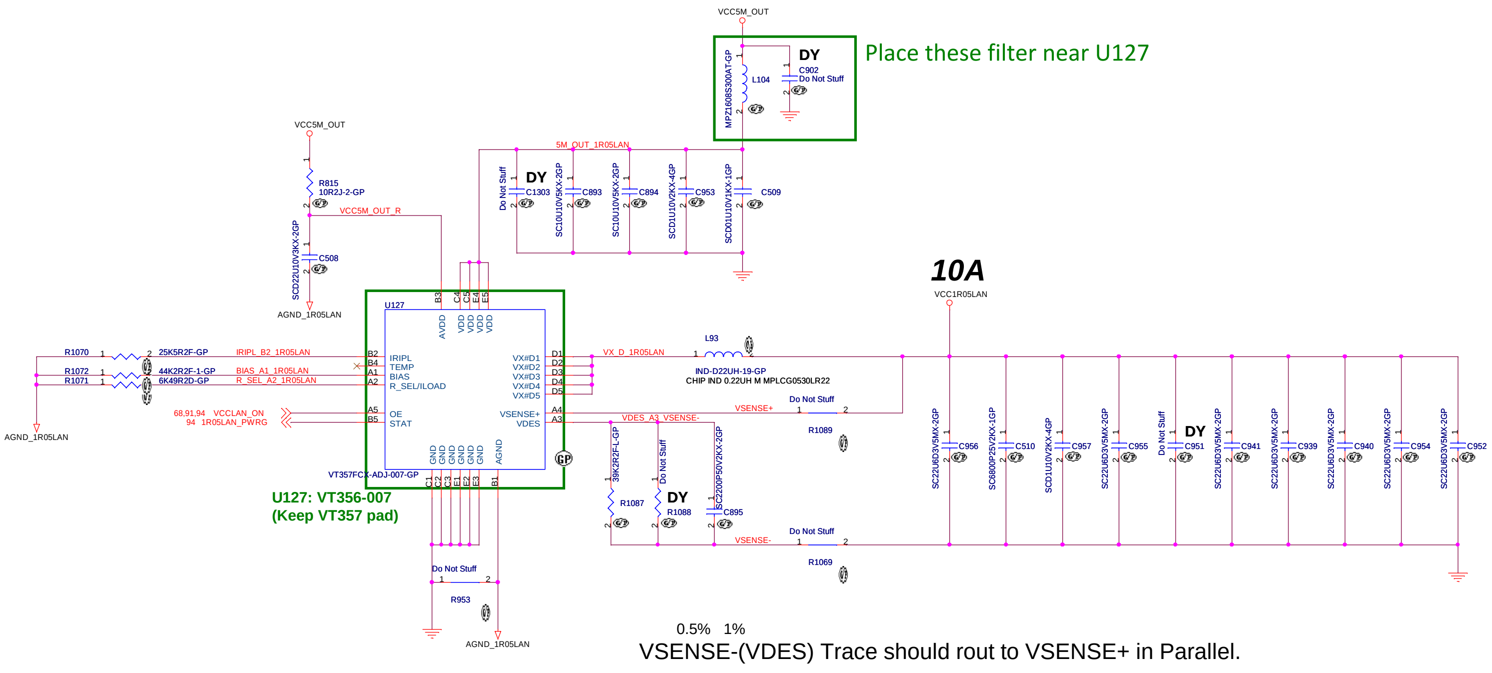
VOUT	Parameter
1.10V	R_VDES = 40.2K
1.05V	R_VDES = 38.3K
VOUT = 1.212 x R_VDES / 44.2K	



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21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

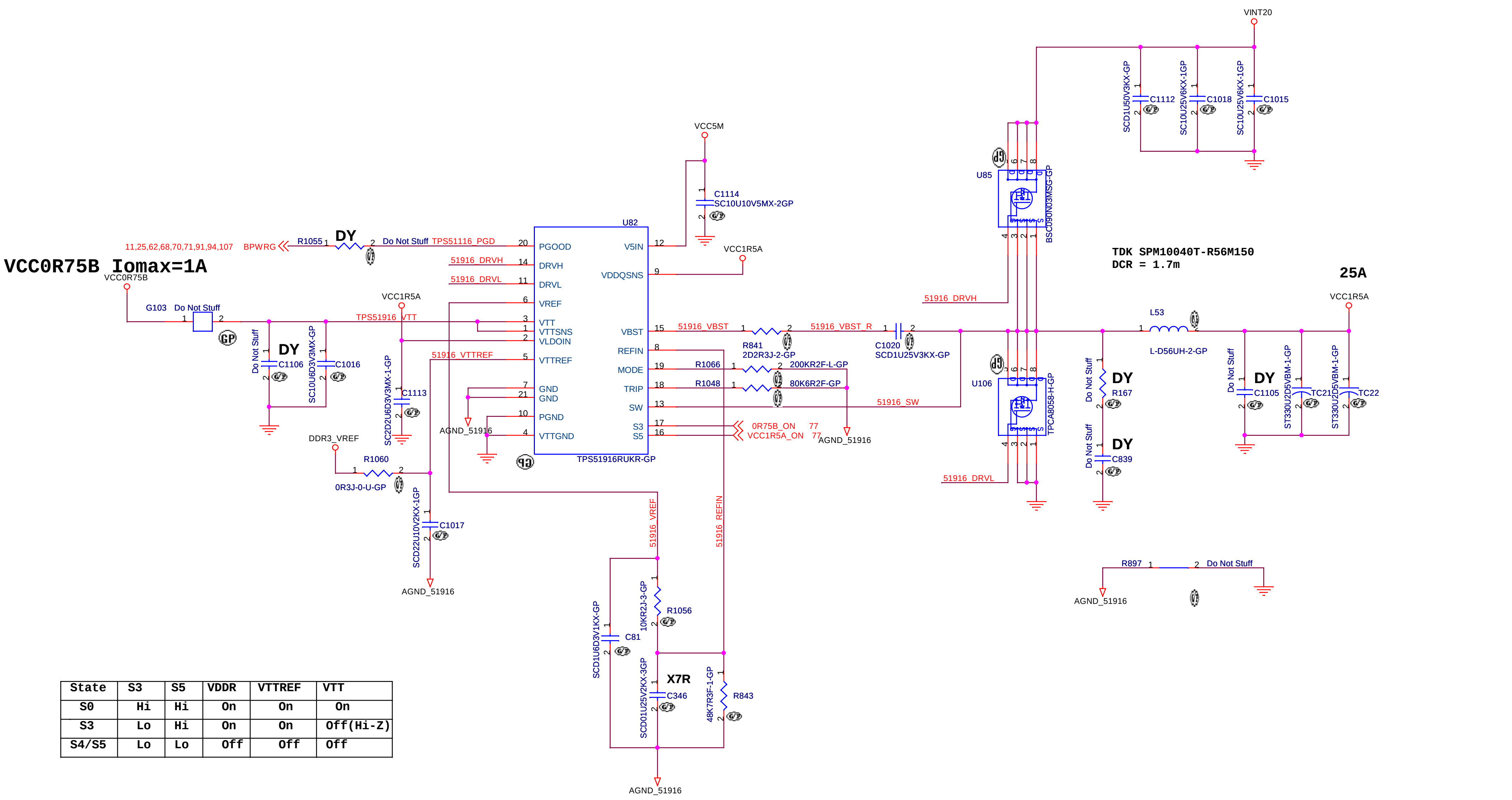
Title	VCC1R05B_VTT	
Size A2	Document Number Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 84 of 107	



BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	**VT357 VCC1R05LAN**	
Size A2	Document Number **Kendo-3 WS**	Rev **SA**
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State	S3	S5	VDDR	VTTREF	VTT
S0	Hi	Hi	On	On	On
S3	Lo	Hi	On	On	Off(Hi-Z)
S4/S5	Lo	Lo	Off	Off	Off

BOM

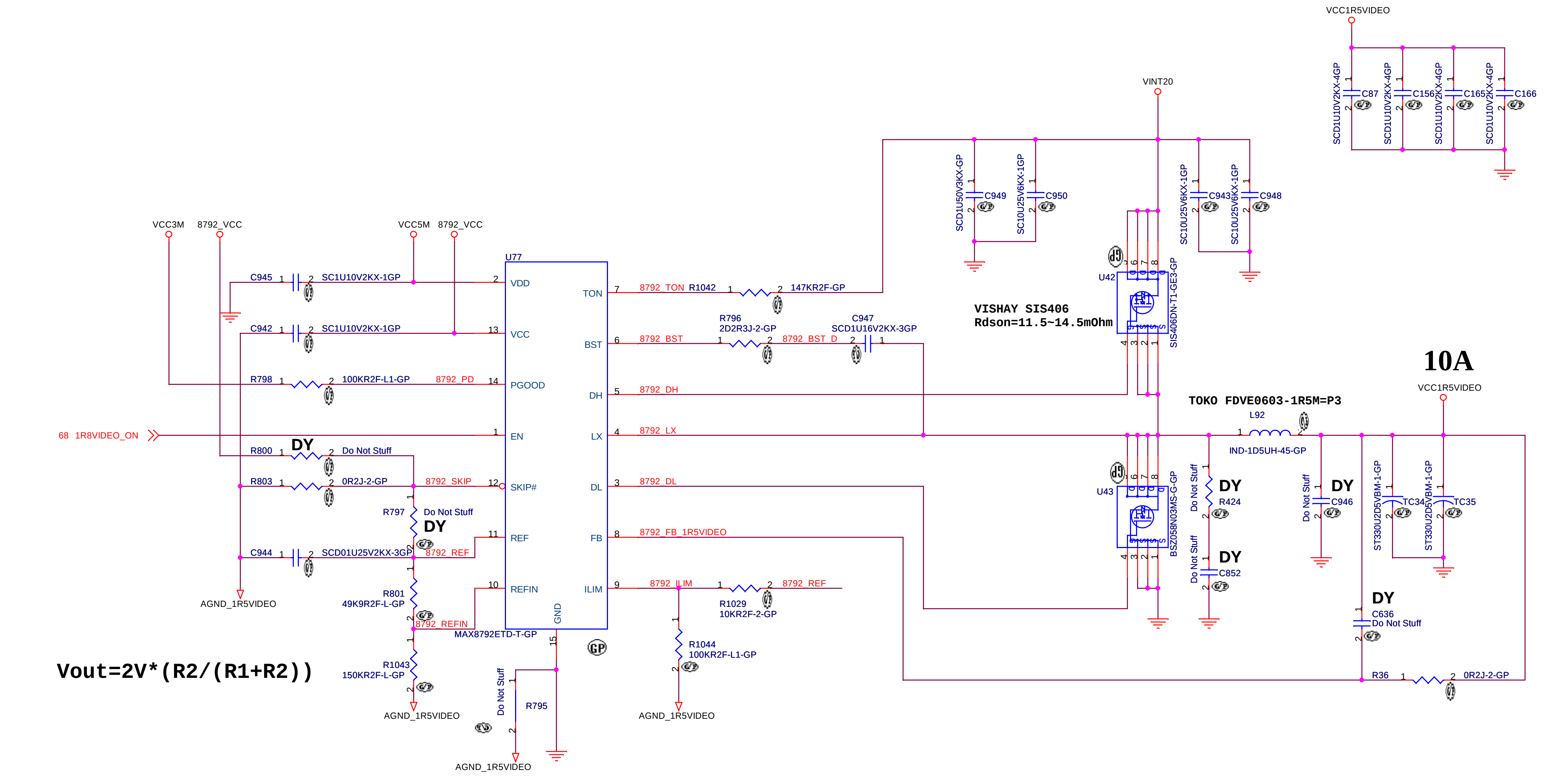
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **DC-DC VCC0R75B**		
Size: A3	Document Number: **Kendo-3 WS**	Rev: SA
Date: Tuesday, December 07, 2010	Sheet 86 of 107	

BOM

緯創資通
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

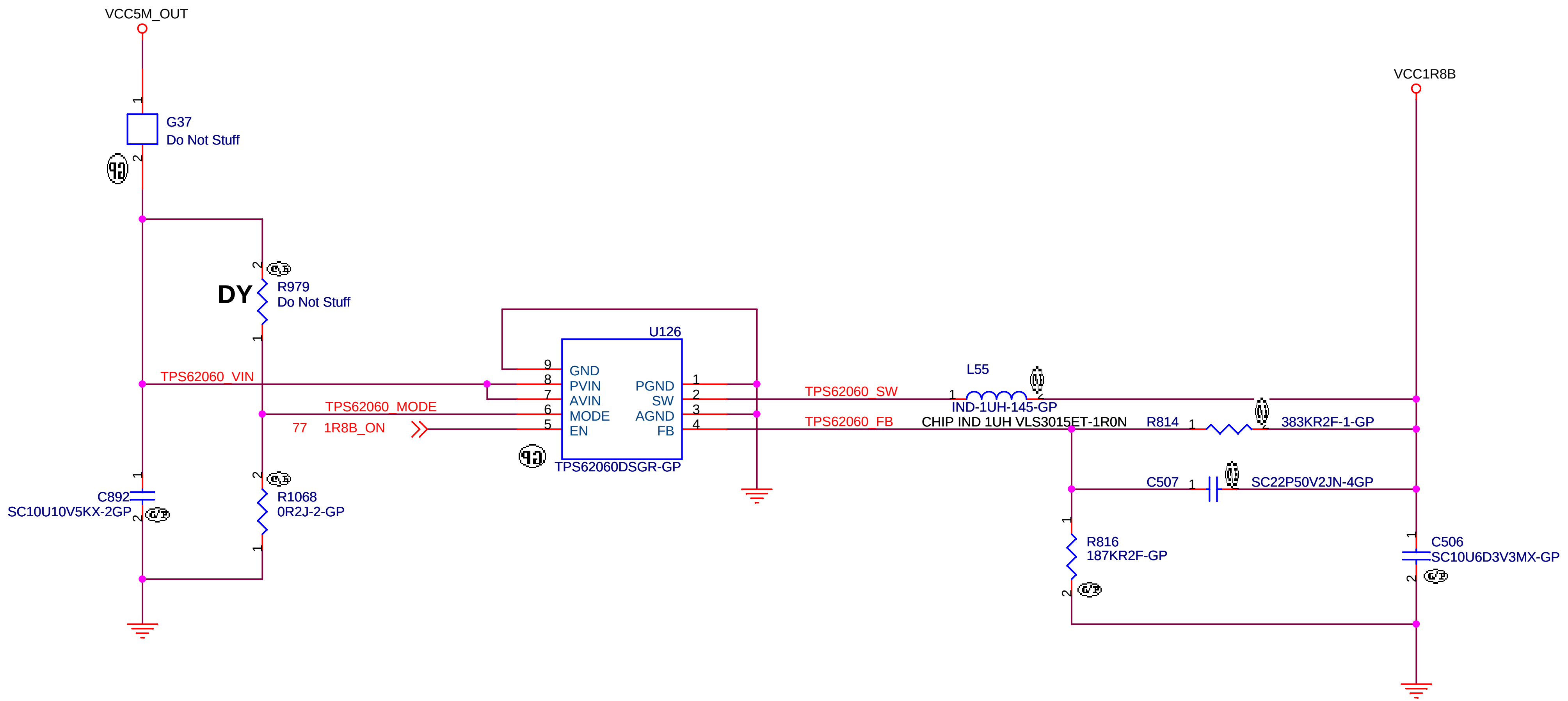
Title	BLANK	
Size A4	Document Number Kendo-3 WS	Rev SA
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緯創資通 **Wistron Corporation**
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Taipei Hsien 221, Taiwan, R.O.C.

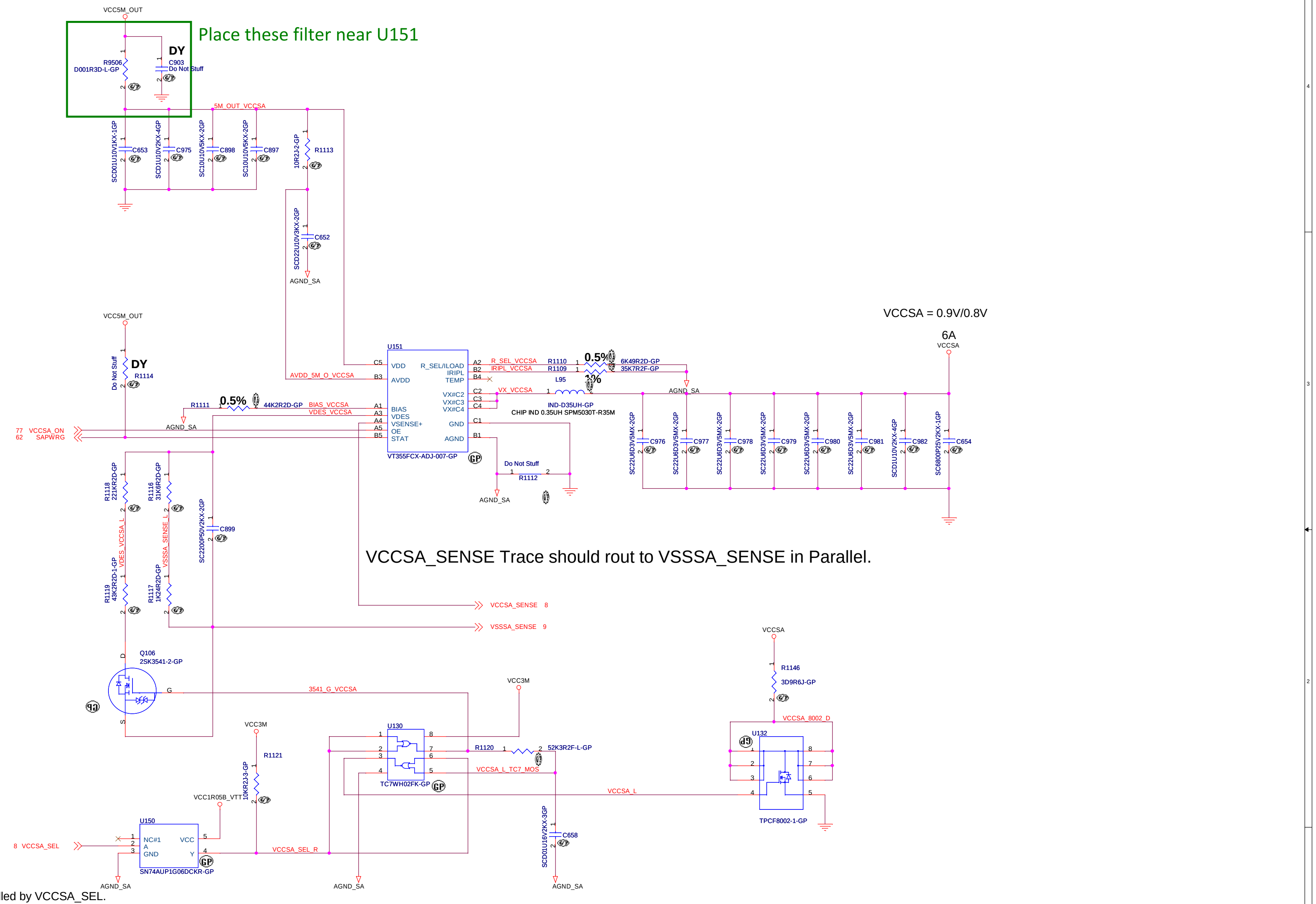
Title	DC-DC VCC1R5VIDEO	
Size A3	Document Number Kendo-3 WS	Rev SA
Date: Tuesday, December 07, 2010	Sheet 88 of 107	



BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	***DC-DC VCC1R8B***	
Size A4	Document Number **Kendo-3 WS**	Rev **SA**
Date: Tuesday, December 07, 2010	Sheet 89 of 107	

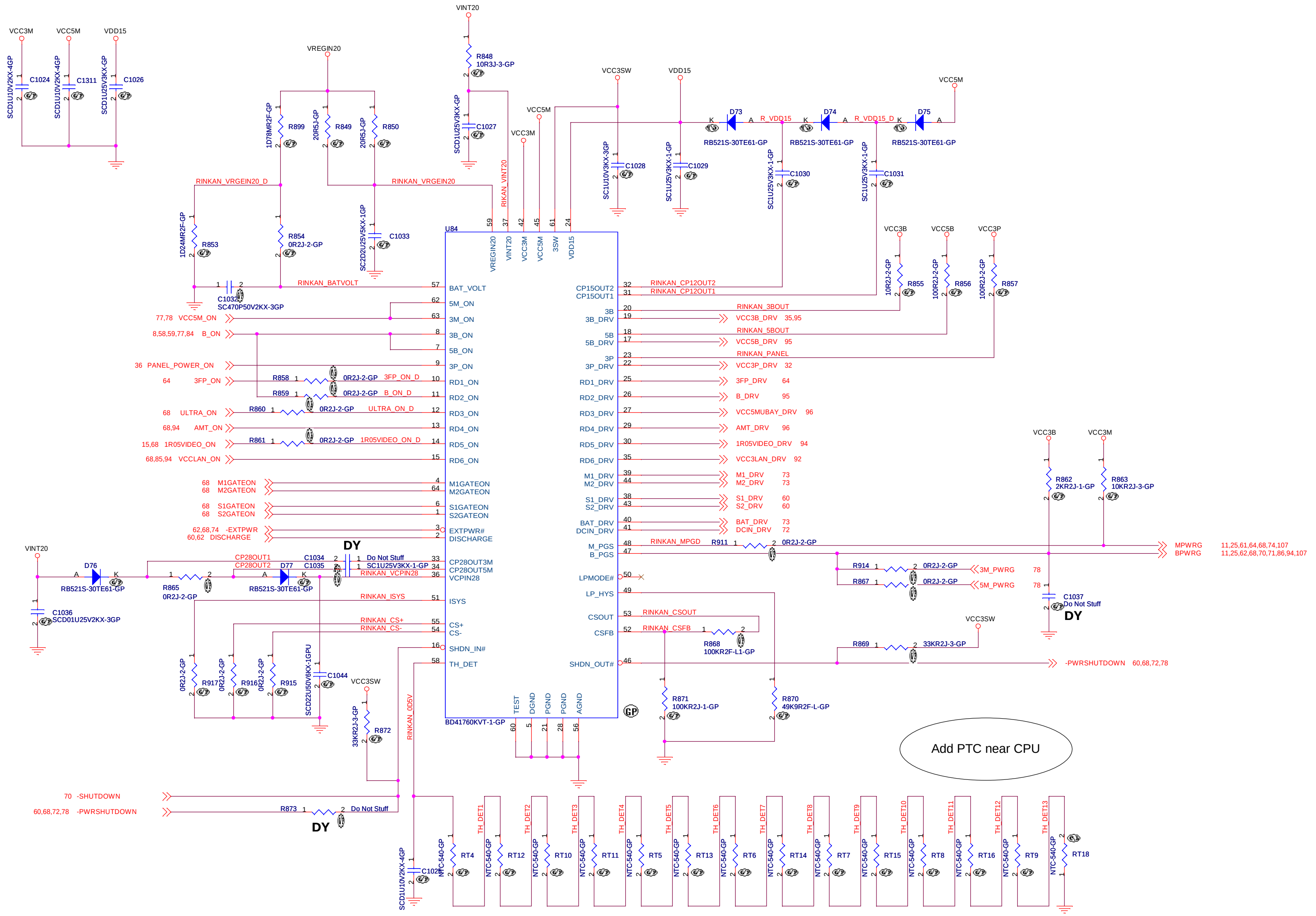


VCCSA power output is controlled by VCCSA_SEL.
This signal is Low : VCCSA output is 0.9V.
This signal is high (1.05V) : VCCSA ouput is 0.8V.

BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	**VCC_SA**	
Size A2	Document Number **Kendo-3 WS**	Rev SA
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	Supplier P/N	WISTRON P/N
1	BD41760KVT-GP	74.41760.09T
2	TB62514FG-GP	74.62514.07T

RT4	VCC5M
RT12	VCC3M
RT10	VCC1R05LAN
RT11	VCC1R05VTT
RT5	VCC1R5A
RT13	Charger
RT6	BAT_IN
RT14	VCCGFXCRE_I
RT7	DC_IN
RT15	CPU_core
RT8	CPU_core
RT16	VCC1R5VIDEO
RT9	GFXCORE_D
RT18	CPU_core

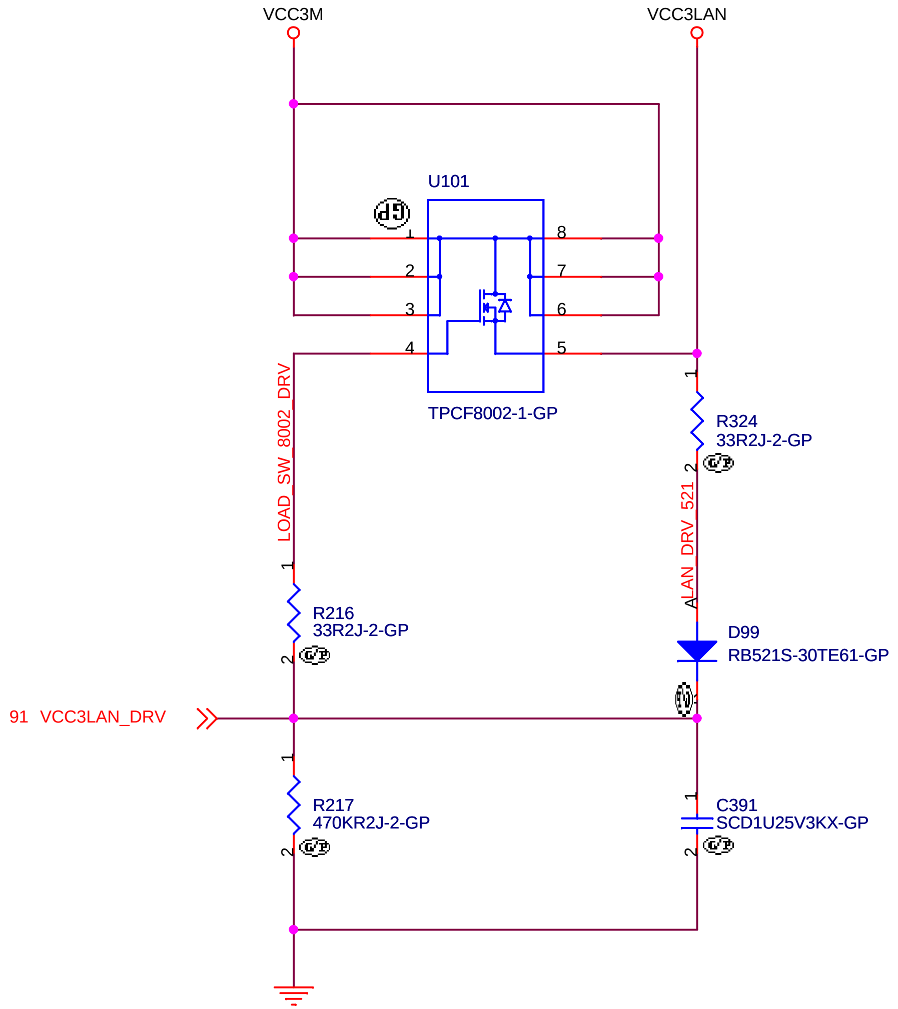
BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title
DC/DC RINKAN-2

Size A2 | Document Number **Kendo-3 WS** | Rev SA

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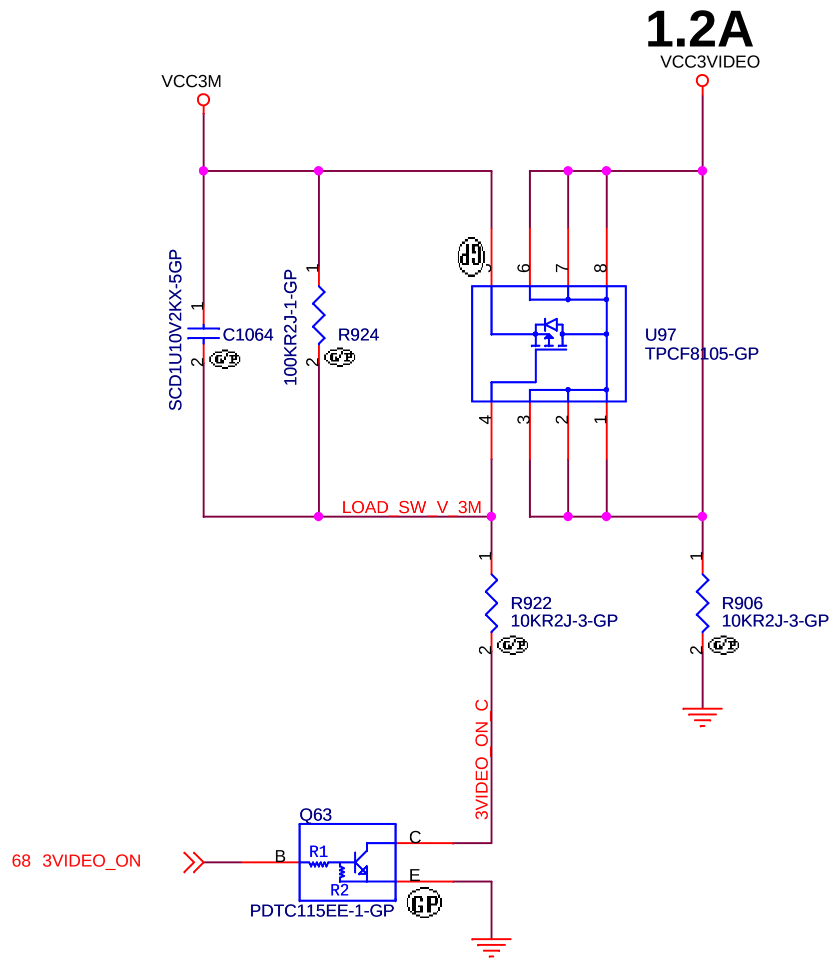


BOM

緯創資通 **Wistron Corporation**

21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	***LOAD SW LAN & LANPWRG***	
Size A4	Document Number **Kendo-3 WS**	Rev **SA**
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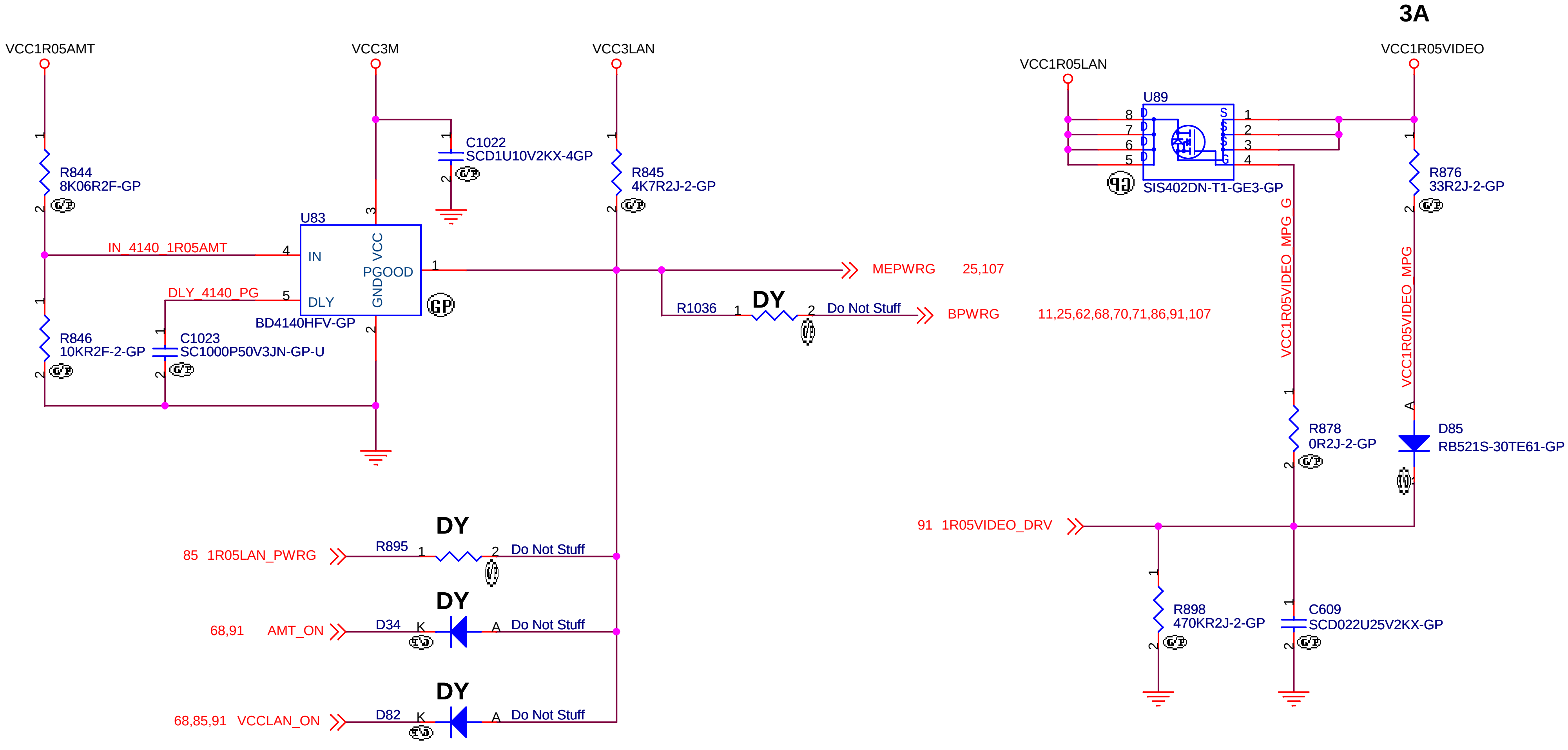


BOM

緯創資通 **Wistron Corporation**

21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

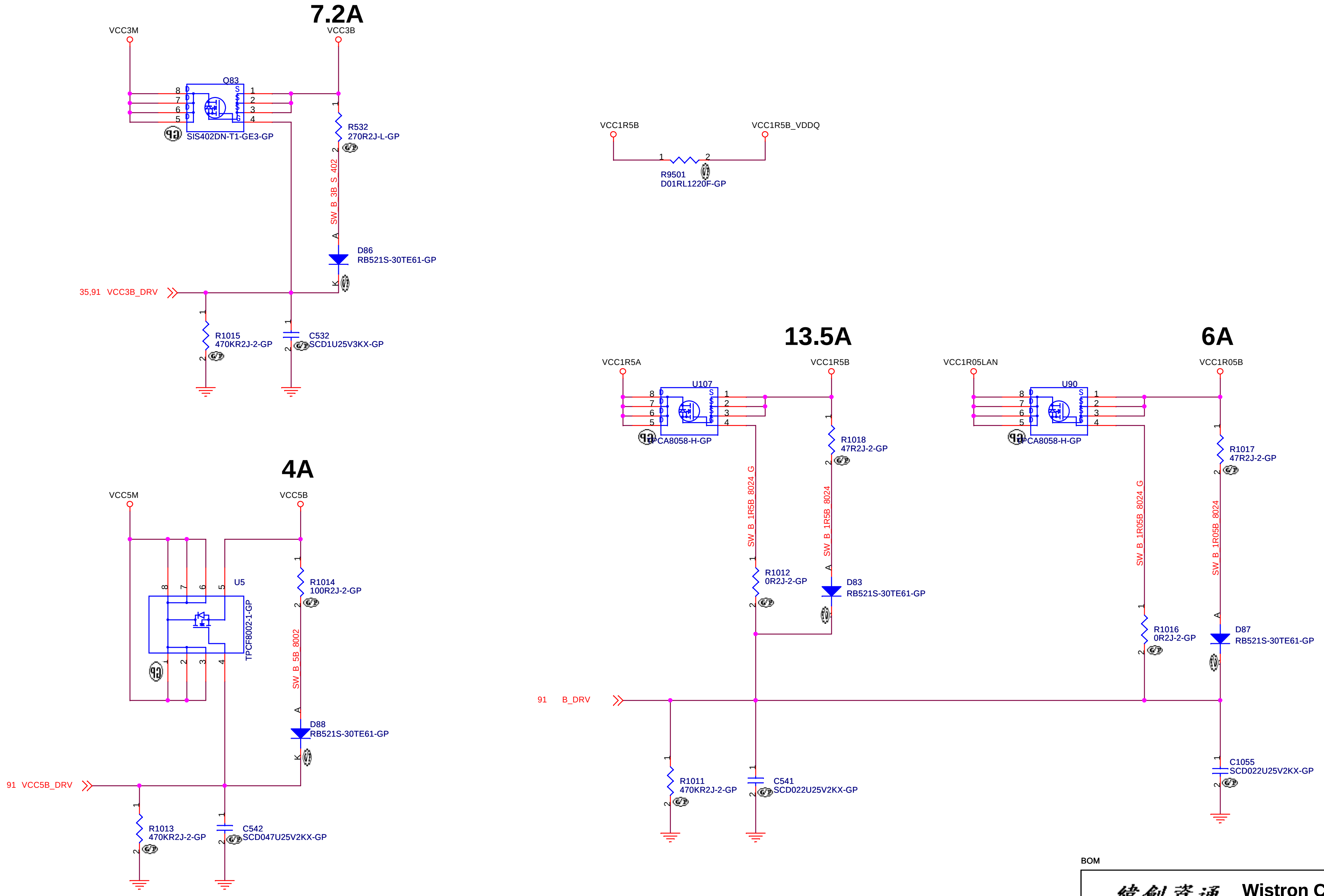
Title	***LOAD SW VIDEO***	
Size A4	Document Number **Kendo-3 WS**	Rev **SA**
Date: Tuesday, December 07, 2010	Sheet 93 of 107	



BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

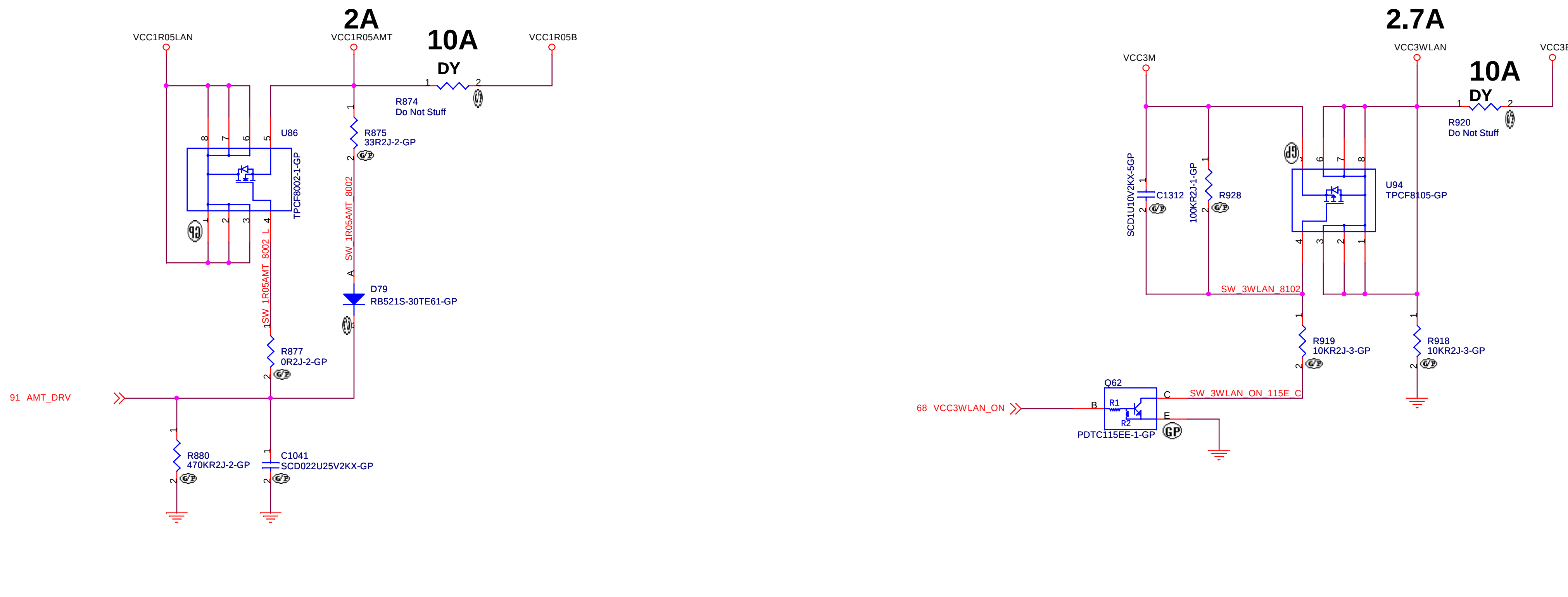
Title	SW AMT/MEPWRG		
Size A4	Document Number: Kendo-3 WS		Rev SA
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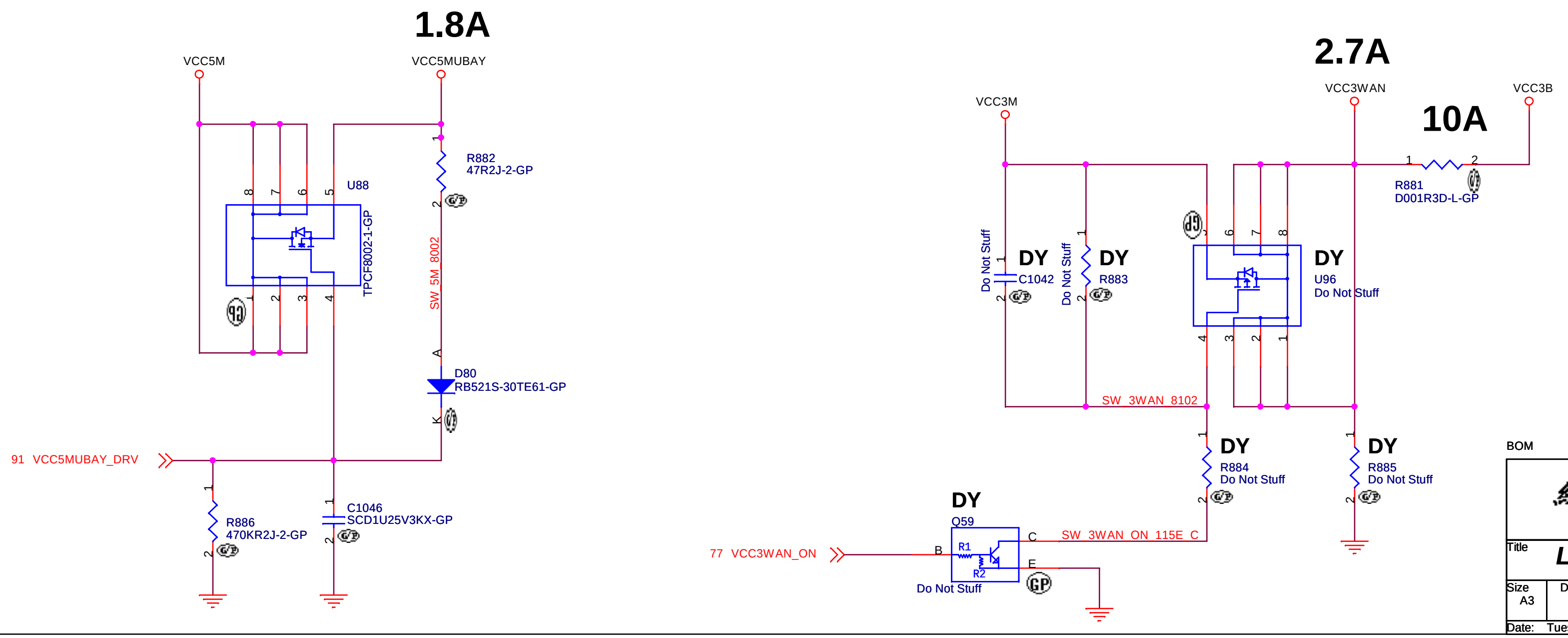


BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	**LOAD SW B**	
Size A3	Document Number **Kendo-3 WS**	Rev **SA**
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	REG/LITE	BB/NO
R881	NO-ASM	ASM
U96	ASM	NO-ASM
R885	ASM	NO-ASM
R883	ASM	NO-ASM
C1042	ASM	NO-ASM
R884	ASM	NO-ASM
Q59	ASM	NO-ASM

BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: ***LOAD SW VCC5MBAY***

Size: A3 | Document Number: **Kendo-3 WS** | Rev: SA

Date: Tuesday, December 07, 2010 | Sheet 96 of 107

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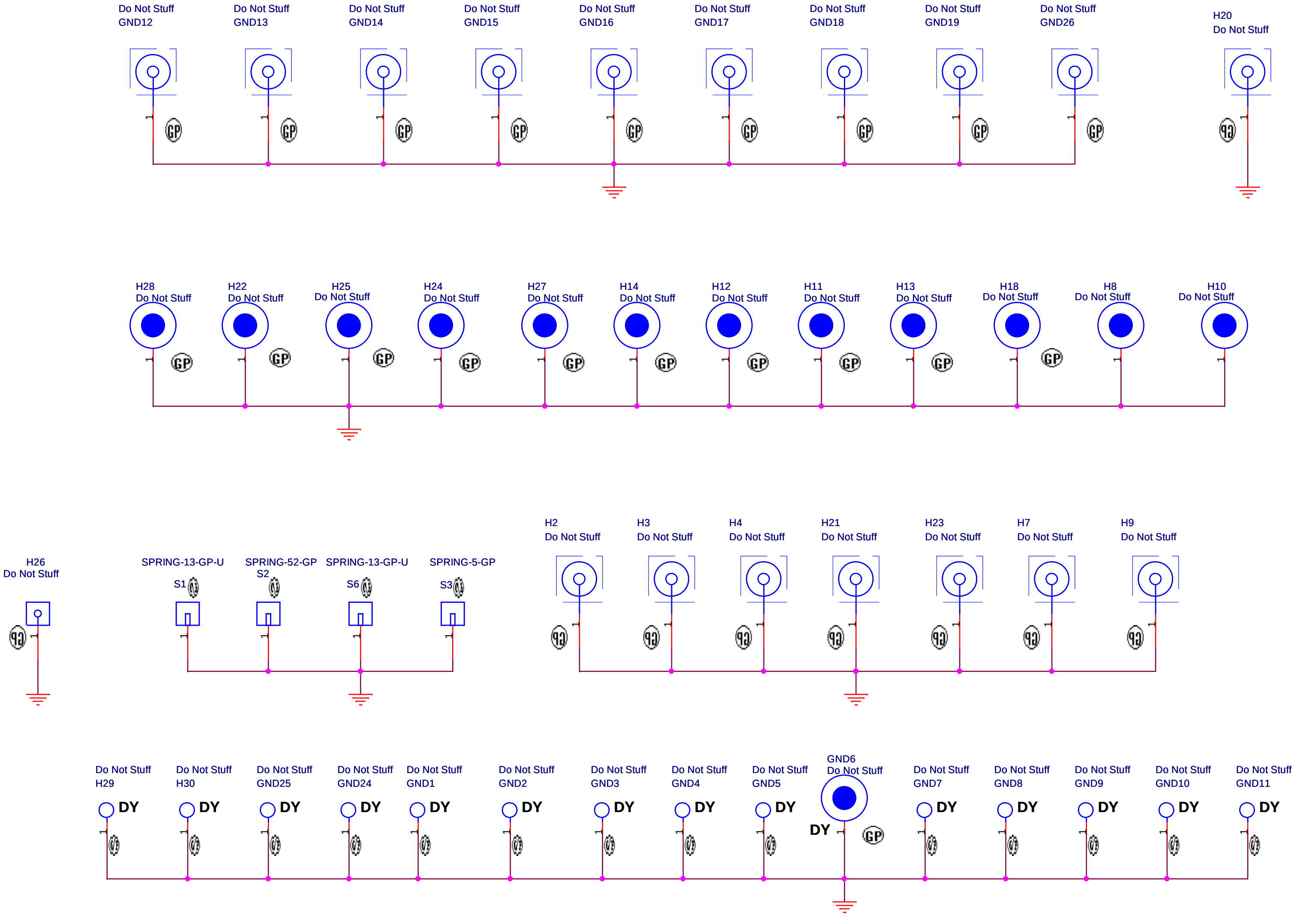
BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title
BLANK

Size	Document Number	Rev
A4	**Kendo-3 WS**	**SA**

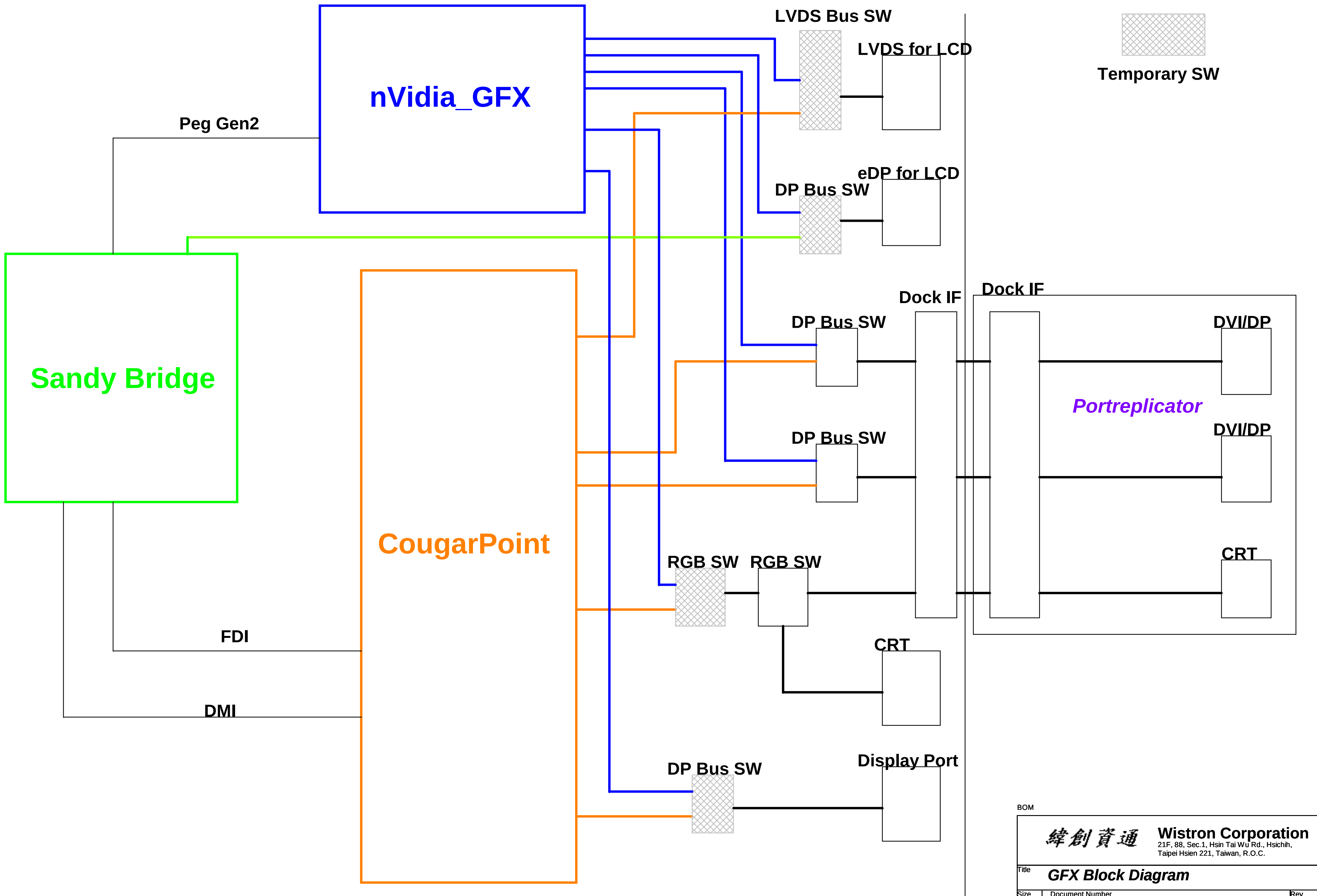
Date: Tuesday, December 07, 2010 Sheet 97 of 107



BOM

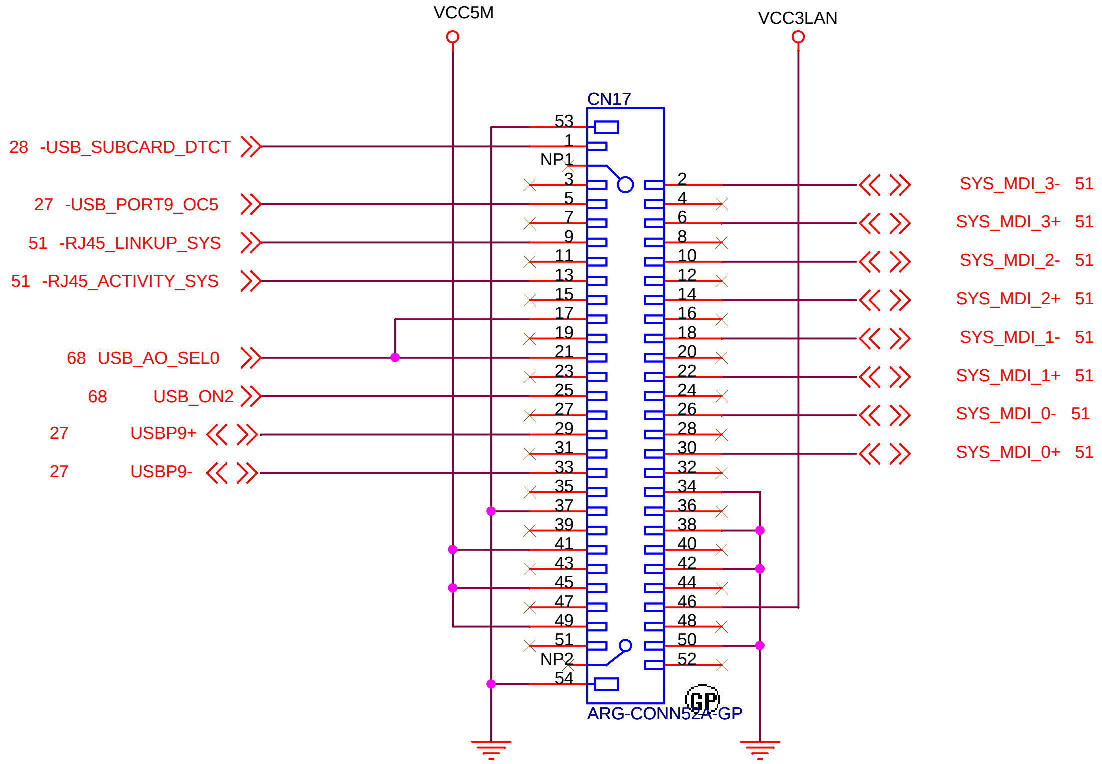
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title		
PTH FOR SCREW HOLES		
Size: A3	Document Number: **Kendo-3 WS**	Rev: SA
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BOM

緯創資通 **Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.		
Title: ***GFX Block Diagram***		
Size: A3	Document Number: **Kendo-3 WS**	Rev: **SA**
Date: Tuesday, December 07, 2010	Sheet 99 of 107	

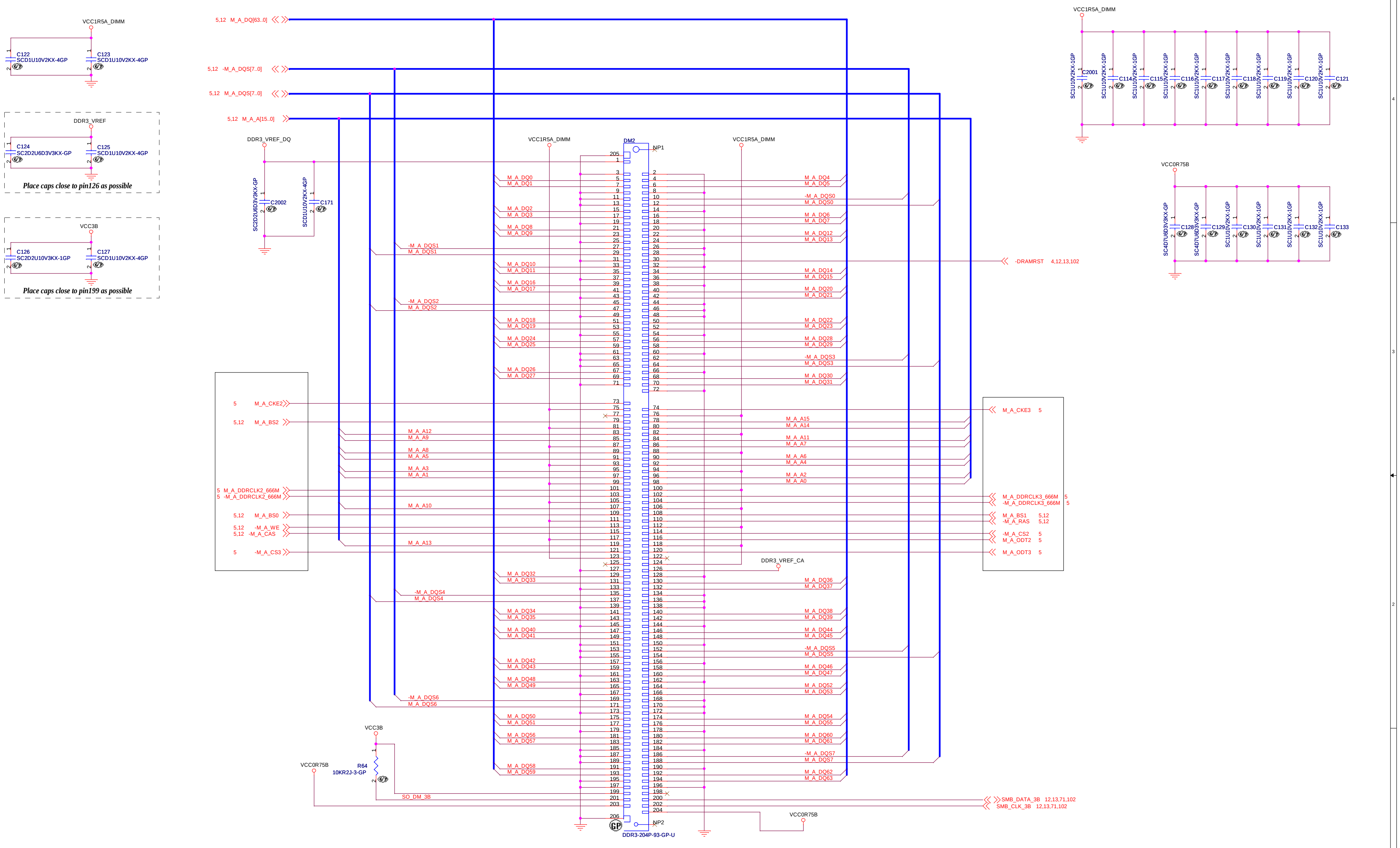


BOM

緯創資通 **Wistron Corporation**

21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	***USB BOARD CONN***	
Size A4	Document Number **Kendo-3 WS**	Rev **SA**
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SPD Address : 52h

This connector should be placed on near side from CPU.

BOM

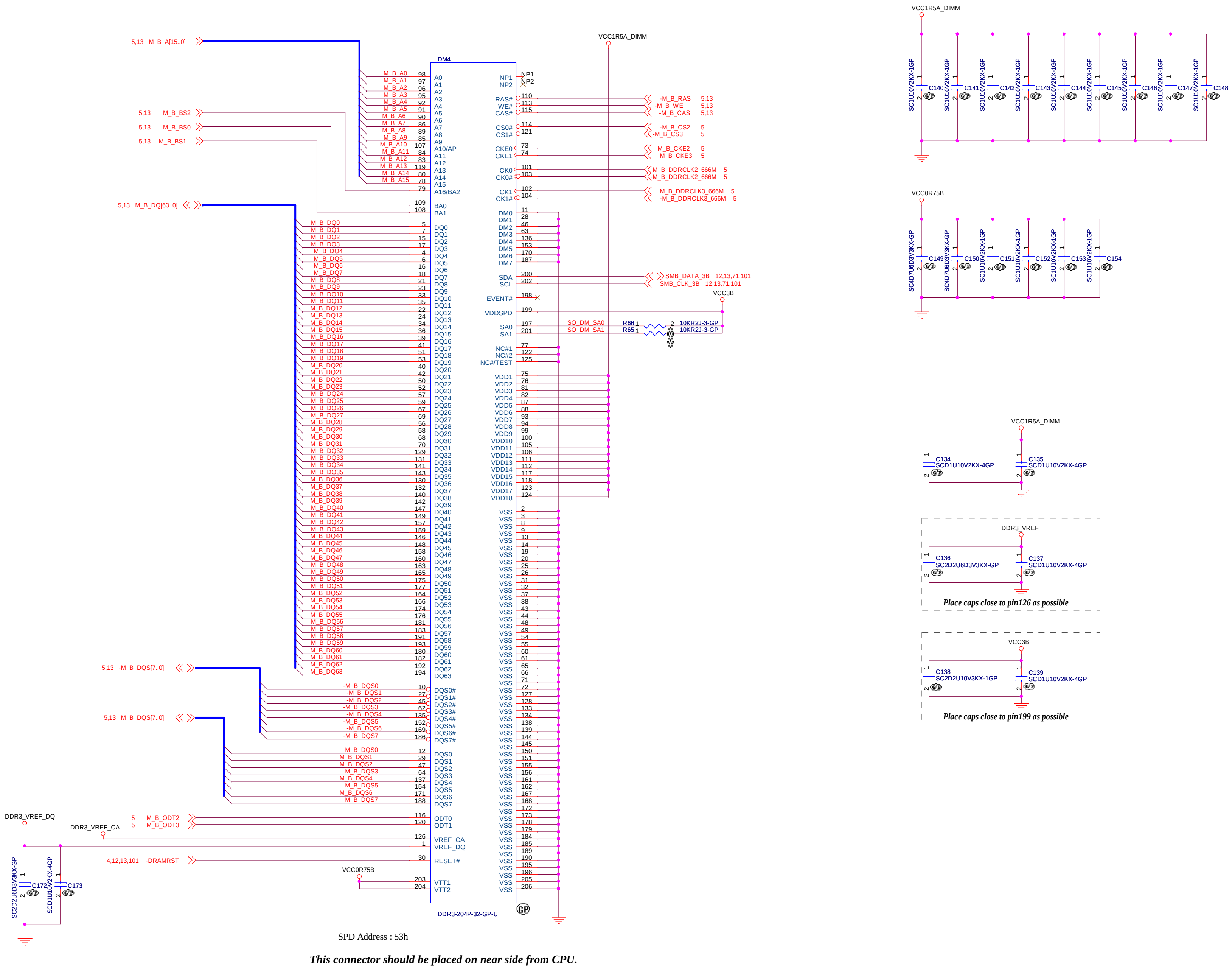
緯創資通 **Wistron Corporation**

21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: ***DDR3 SODIMM_CH-A_Secondary***

Size	Document Number	Rev
A2	Kendo-3 WS	SA

Date: Tuesday, December 07, 2010 Sheet 101 of 107



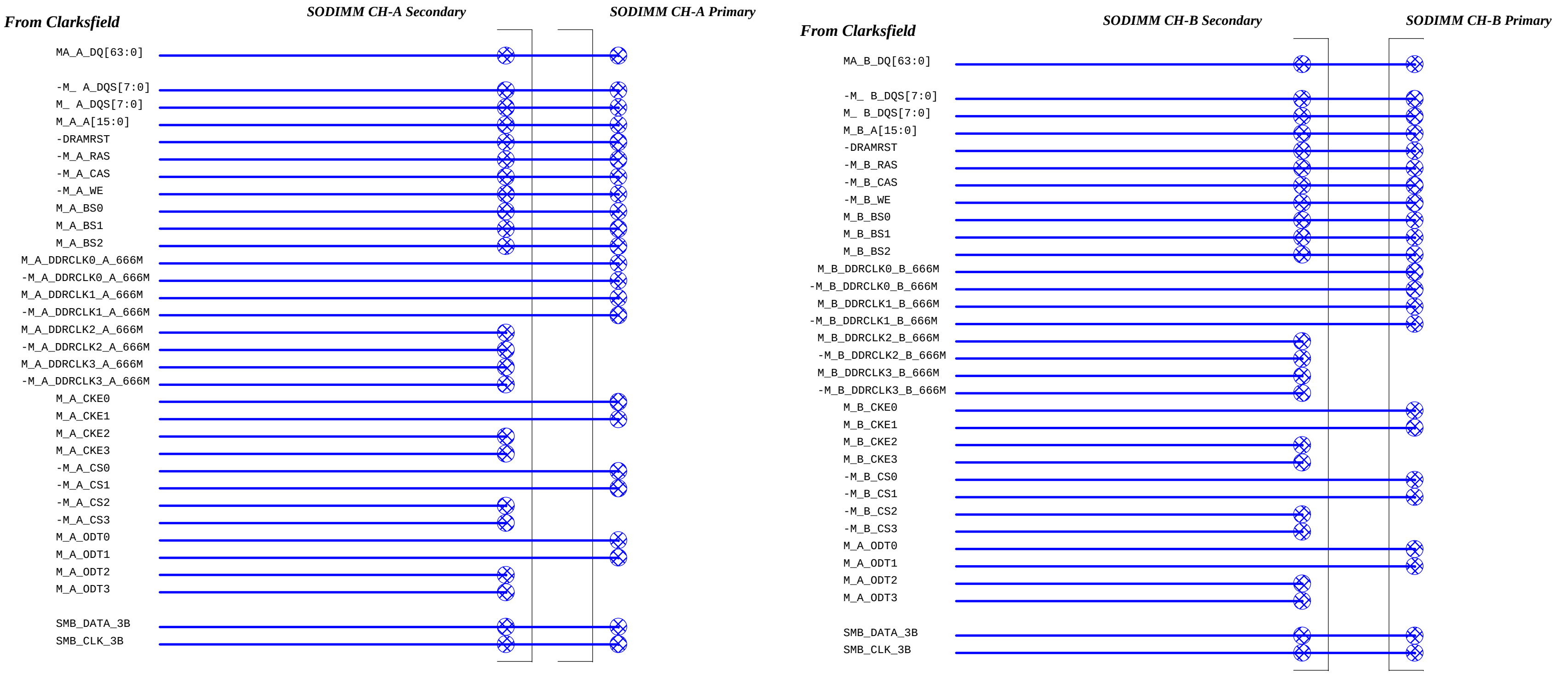
SPD Address : 53h

This connector should be placed on near side from CPU.

BOM

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.		
Title	**DDR3 SODIMM_CH-B_Secondary**		
Size A2	Document Number	**Kendo-3 WS**	Rev SA
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SODIMM should be installed on CH0 Primary at first.

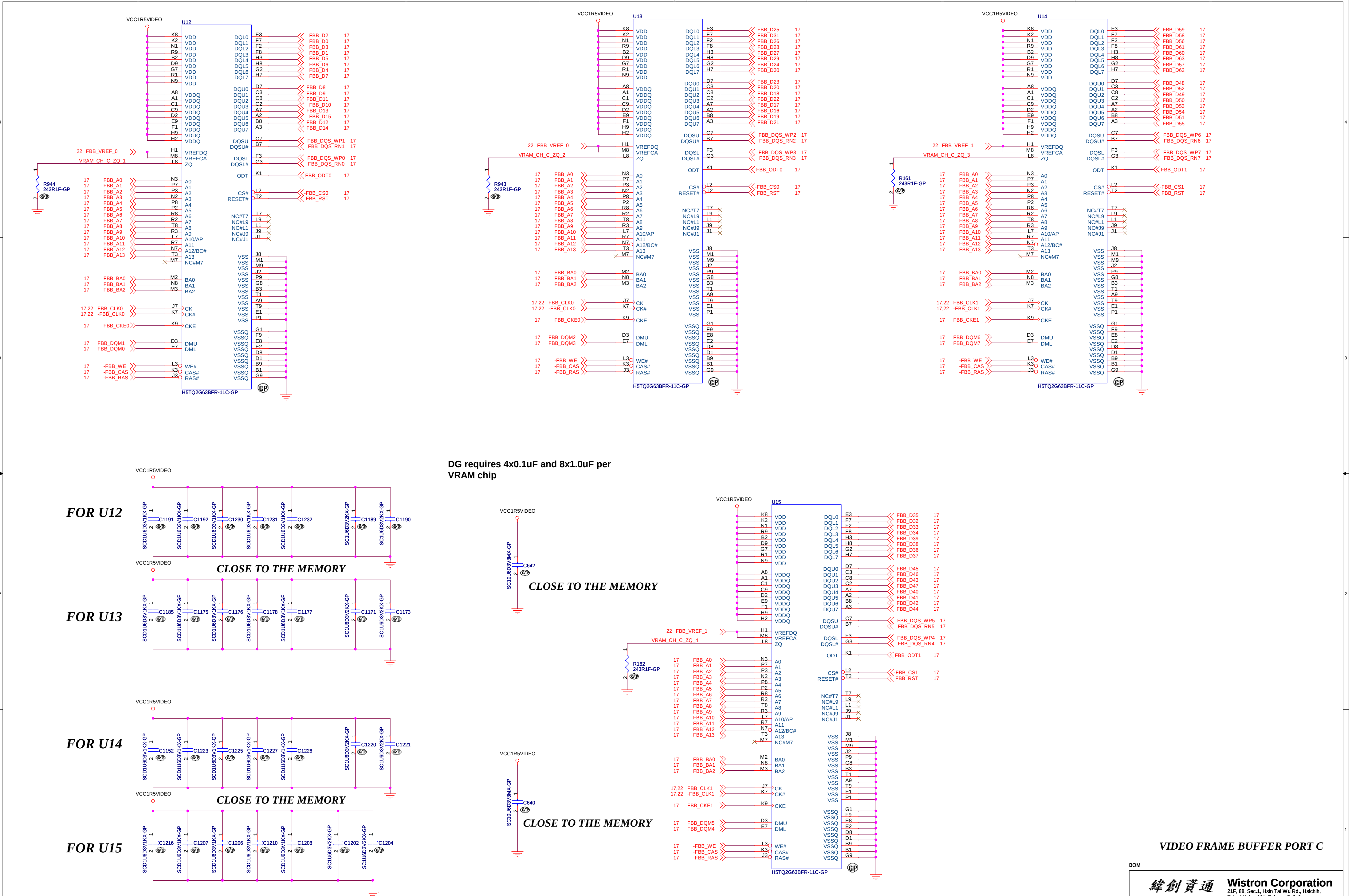


SODIMM IIC Address :
CH-A Primary : 50h
CH-B Primary : 51h
CH-A Secondary : 52h
CH-B Secondary : 53h

Pin1 on SODIM connector (VREF_DQ) only conects to DDR Voltage divider.
Clarksfield H17/J17 is left.

BOM

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	***SODIMM CONFIGURATION***
Size A2	Document Number **Kendo-3 WS** — Rev **SA**
Date: Tuesday, December 07, 2010	Sheet 103 of 107

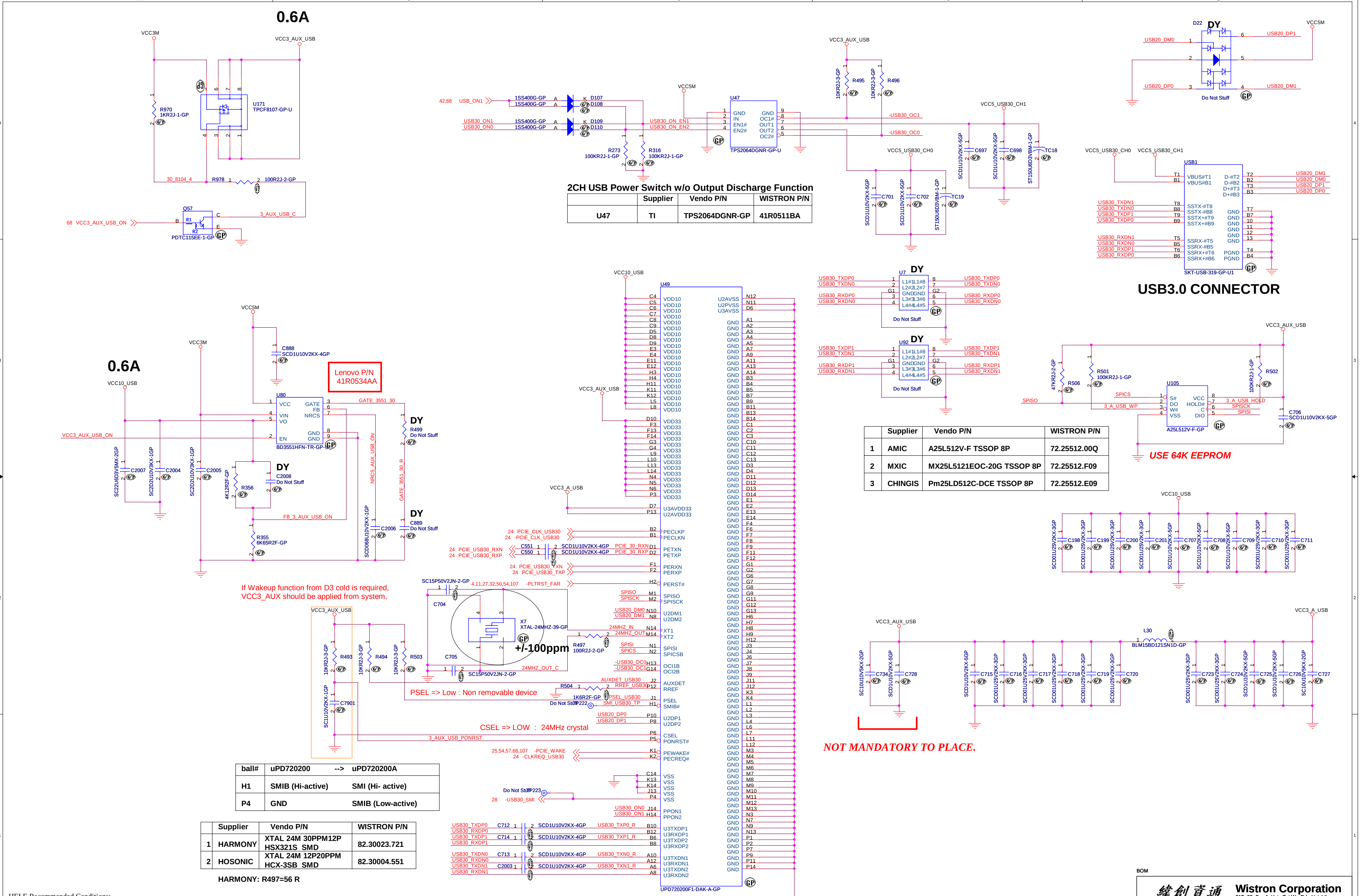


VIDEO FRAME BUFFER PORT C

BOM

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title	VRAM CHANNEL-C	
Size A2	Document Number Kendo-3 WS	Rev SA
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	Supplier	Vendo P/N	WISTRON P/N
U47	TI	TPS2064DGNR-GP	41R0511BA

	Supplier	Vendo P/N	WISTRON P/N
1	AMIC	A25L512V-F TSSOP 8P	72.25512.00Q
2	MXIC	MX25L5121EOC-20G TSSOP 8P	72.25512.F09
3	CHINGIS	Pm25LD512C-DCE TSSOP 8P	72.25512.E09

ball#	uPD720200	--> uPD720200A
H1	SMIB (Hi-active)	SMI (Hi- active)
P4	GND	SMIB (Low-active)

	Supplier	Vendo P/N	WISTRON P/N
1	HARMONY	XTAL 24M 30PPM12P HSX321S_SMD	82.30023.721
2	HOSONIC	XTAL 24M 12P20PPM HCX-3SB_SMD	82.30004.551

HARMONY: R497=56 R

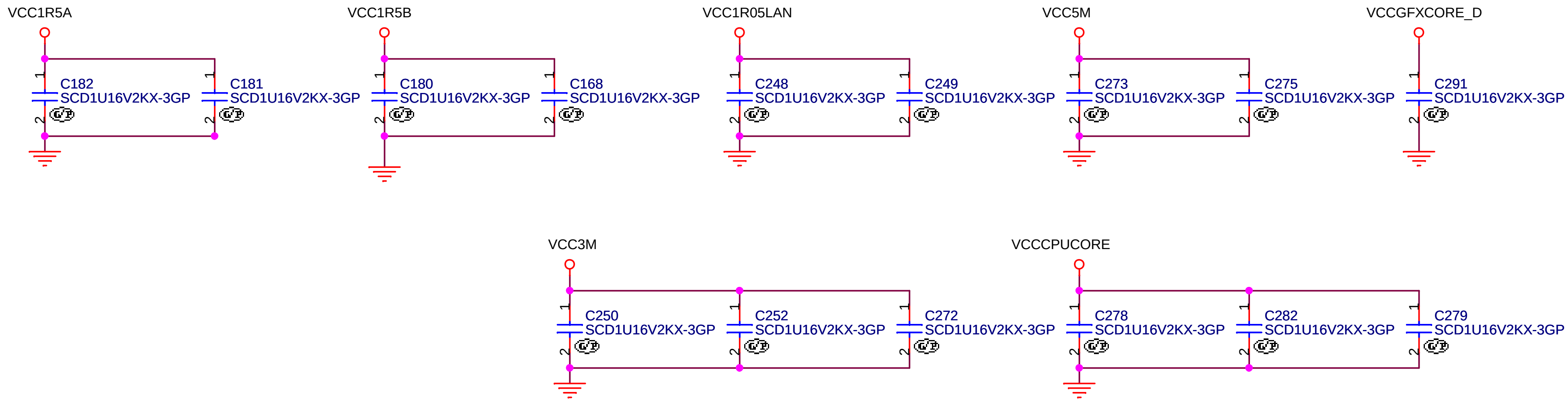
HELE Recommended Conditions:
Normal Frequency: 24MHz.
Frequency Tolerance: +/- 30ppm.
Load Frequency: 12pF.
Effective Series Resistance: 50-ohm.
Effective Shunt Capacitance: 2pF.

BOM

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title	USB 3.0		
Size A2	Document Number	Kendo-3 WS	Rev SA
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Long power trace EMI decoupling caps



BOM

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Title
EMI DECOUPLING

Size	Document Number	Rev
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21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
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Title	TEST PAD	
Size A2	Document Number Kendo-3 SWG	Rev SA
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